

# *The Electragist*

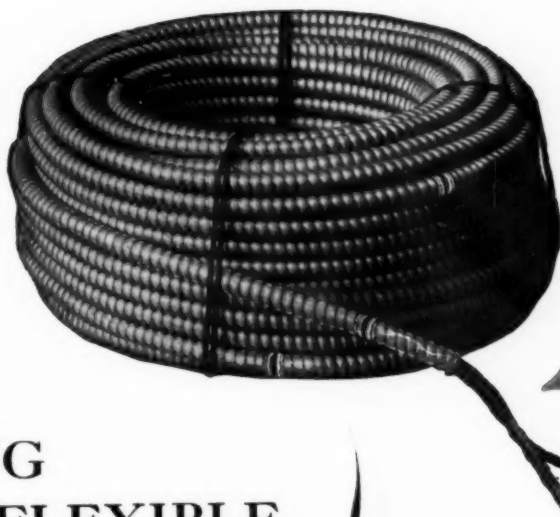
TRADE MARK REG. U.S. PAT. OFFICE

Vol. 25, No. 4

*Association of Electragists*  
INTERNATIONAL

FEBRUARY, 1926

## INTRODUCING Rhode Island Red IMPROVED ARMORED CABLE



IT IDENTIFIES  
YOUR JOB  
RED BRAID  
our own marking  
approved by the  
Underwriters

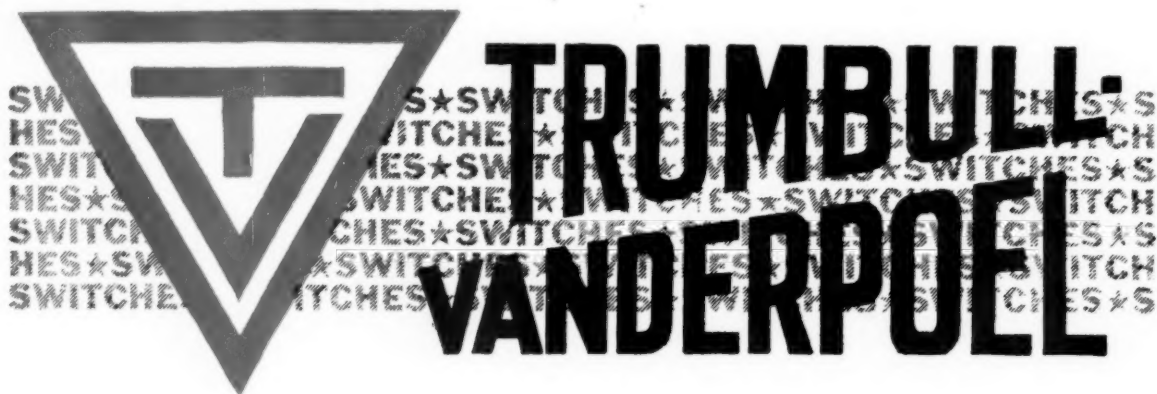
IT'S STRONG  
IT'S VERY FLEXIBLE  
IT'S EASILY STRIPPED  
IT'S SAFE  
IT'S INSPECTED  
IT'S TESTED

BECAUSE

It's made complete  
from BARE WIRE to  
FINISHED CABLE

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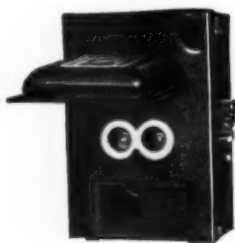
PROVIDENCE INSULATED WIRE CO.  
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# 11 Lines—

*built and priced to profitably fit every job*



"Universal" Meter Switch — one of 97 types of standardized switches.

## 1. Industrial Safety Switches

Quick Make and Break—Heavy Duty Type

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A high grade medium priced line—quick break

## 3. Series 7000 Enclosed Switches

A low priced line for entrance work, etc.

## 4. "Mason" Safety Switches

A special line—extra small—interlocked fuses

## 5. Standardized Meter Switches

"Doall" Type—The original standardized line

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With branch fuses—a popular line

## 7. "Safe Lock" Meter Switches

Accessible interlocked main fuses

## 8. Polyphase Meter Switches

Standardized for 3 phase entrances

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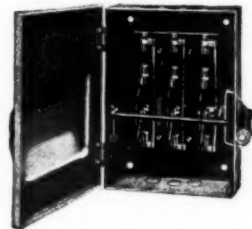
High grade knife switches 30 to 10,000 Amps.

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Low priced knife switch line—30-200 A.

## 11. Fuse Blocks—Battery Switches,

And many special types catalogued.



Motor Starting Switch — 3 styles offered.

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# *The Electragist*

(The National Electrical Contractor and The Electrical Contractor-Dealer)

Official Journal of the  
Association of Electragists—International

Vol. 25

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No. 4

## First Reports From Local Code Committees

### New Orleans and Kansas City Reports Give Full Evidence of Value of Such Committees When Properly Organized and Functioning

EVIDENCE of the effectiveness of a local Code Committee when properly organized and functioning is given in the annual reports of two such committees, namely those operating in New Orleans, La. and in Kansas City, Mo. For a year or more in both places representatives of central station, inspection interests and contractors have been meeting regularly and thrashing out local code matters in a co-operative spirit. The result has been a better understanding on the part of all, more respect for the National Electrical Code, less incentive to make snap judgments or rulings, more of a willingness to work together and a better appreciation each of the other's problems.

A resume of the year's activities will follow with the thought that it might be helpful to local code committees in other places.

#### New Orleans

Personnel: Roydan Douglas, contractor, chairman; L. F. Griffith, superintendent of distribution New Orleans Public Service Company; W. A. Dilzell, city electrician and George Welman, chief inspector Louisiana Fire Prevention Bureau, secretary.

Regular meetings are scheduled for the fifteenth of each month at 1:30 P. M. at the office of the Douglas Electrical Construction Company. These meetings are strictly formal according

to parliamentary rules, luncheon meetings not being considered official.

The regular routine of business is to take up matters referred to the local committee by the national code committee chairman, local code matters, utility regulations and such other matters as members or others might bring to its attention.

During the course of the year the committee was successful in securing the co-operation of all interests in helping the city electrician draft a new ordinance governing electrical installations. The committee itself gave the city electrician considerable help.

One manufacturer who had been unable to secure the use of certain of his products in New Orleans was given the opportunity of laying his case before the committee for an impartial hearing. While he was not successful, at least he had the feeling that he was not being barred by a one man prejudice.

The chairman on several occasions brought to the attention of the committee the unsatisfactory co-operation of architects with contractors in the preparation of electrical plans.

The committee passed a resolution suggesting to the city administration that a clause be inserted in the electrical code requiring as a part of the application for inspection the filing of a complete plan or description of the electrical work.

Abuse of fuses and cutouts by penies or bridges was discussed and several designs of cutouts to overcome this trouble were mentioned. It was thought that a plug cutout, with a bayonet joint and depressed base for center contact would solve the problem. Another suggestion was to conceal the center contact so that it be reached only by the contact or the plug.

A great number of interesting code questions came up and when the committee could not reach a satisfactory agreement the national chairman was asked for an opinion. Among the subjects discussed were:

Entrances—Should conductor to take care of 100 percent branch circuit capacity be installed or should a load factor of say 75 percent be recognized? Unsettled, left to national chairman.

The utility brought out that according to 806 (a) their underground service conduit must be enclosed in concrete from floor line to service fuse cabinet and as its service wiremen were not concrete mixers it was a hardship. It was suggested that the utility go ahead and when a number of services were ready to have its paving force do the work.

Grounding—The following methods of making ground connections were thought to be dependable:

1—Connect grounded service wire to conduit on outside end and connect

lower end of conduit to the ground—work to be done by the contractor.

2—Ground wire and grounded service wire to be connected together in service cabinet and connection to cabinet made by lighting company, contractor to run wire and leave the end near service cutout the same as his "load side" wire.

3—Lighting company not to permit any connections to be made at fittings in service conduit on street side of meter.

Transformers—Agreed that when operating between 601 and 5000 volts transformers should be permitted to be attached to outside building walls, provided all wiring is in rigid conduit and transformers are provided with terminals that enclose all wire and connections.

Signs—Suggestion that signs wired with conduit be not required to bear Underwriters' label was not approved because other construction features were just as important from a safety standpoint as electrical features.

A great many other Code questions were brought up by various members but no action was taken.

#### Kansas City

Personnel: D. D. Clarke, electrical engineer, Kansas City Pr. & Lt. Co.; K. W. Adkins, (M. L. Nordgren, alternate), Missouri Inspection Bureau; Frank J. Seiler, city electrician; Fred E. Geiss, electragist; A. Penn Denton, electragist, chairman. Note—The members are also members of the Kansas City Electric Club, and constitute the Electric Club's Code Committee.

#### Functions:

- Review of Existing Electrical Ordinances.
- Review of Electrical Section of the proposed local Building Code.
- Review and discussion of rules and regulations issued by the City Electrician.
- Review and discussion of new rules in the 1925 Edition of the National Electrical Code, preparatory to adoption of same January 1st, 1926.

Meetings: Weekly luncheon and evening meetings were held during January, February, March and April; bi-weekly meetings during May, June, July, August and September; weekly meetings again during October, November and December. These meetings were held at the University Club and at

the office of the Kansas City Power & Light Company.

#### Scope of Investigations:

Bulletins issued by City Electrician and special meetings.

Bulletin—January 23, 1925.

- Identified wiring requirements.
- Connection of wall switches to identified wiring.
- Outlet Boxes and plate in knob-and-tube systems.
- Fixture Studs, requirements.
- Flexible tubing, supporting and length of.
- Taping and soldering.
- Armored Cable installations, limitations.
- Standardized Meter Service Switches, effective dates.
- Load side fuses, specifications and use thereof.
- Service Entrances and Service Switches in knob-and-tube work, grounding of.
- Single Conductor armored cable prohibited for grounding conductor.
- System grounding requirements, single phase and three phase.
- Artificial grounding requirements.
- n. o. and p. Administrative provisions.

Bulletin—February 23rd, 1925.

- Fixture Supports—old house work.
- Fixture studs, general.
- Bracket outlet boxes for knob-and-tube work.
- Branch circuit wattage limitation.
- Alternating current fractional horsepower wattage limitation.
- Branch circuit fusing.
- Lighting service and feeder capacity requirements.
- Non-electrical fittings.
- Contact.
- j. and k. Administrative Provisions.

Bulletin—March 23, 1925.

- Oil burner motors and other non-portable fractional horsepower rotating machinery, wiring methods for.
- Outlet boxes for drop cords and ceiling receptacles in knob-and-tube work.
- Auto starter switches.
- Meter connection diagrams.
- e. f. & g. Administrative Provisions.

General meeting, March 28, 1925, at City Hall council chamber with licensed electricians, jobbers, architects and engineers, conducted by city electrician. Open discussion of the three bulletins that had been issued previously.

General meeting, April 14, 1925, with supply jobbers conducted by city electrician to discuss materials needed for new requirements.

General meeting, April 23, 1925, at City Hall council chamber with licensed electricians, jobbers, fixture dealers, architects and engineers, conducted by city electrician. Open discussion of proposed fixture wiring and installing rules.

Bulletin—May 25, 1925.

- Identification of fixture wires.
- Chain fixtures—installation rules.
- Ceiling fixtures—installation rules.
- Bracket fixtures—installation rules.
- Insulation of fixtures.
- Socket switching requirements.
- Range and Lighting Feeder Sizes.

General meeting, May 28, 1925, at City Hall council chamber with licensed electricians, jobbers, fixture dealers, architects and engineers, conducted by city electrician. Open discussion of May 25.

"Our Committee," writes Chairman Denton, who is also National Chairman, "by its close contact with local electrical building construction work, has been able to assist in bringing about more respect and comprehensive adherence to the National Electrical Code. The co-ordination of the work of all interests locally making contact with the public in furnishing the public electric service has resulted in encouraging all members of the Local Code Committee in the study of Code standards with the result that all electrical, insurance and inspection interests have co-operated more intelligently in meeting inspection conditions during 1925, and complying with new code requirements. Under the old order of things, the adoption of the 1923 National Electrical Code was not completely accomplished in Kansas City territory until about the middle of the summer of 1925, yet the adoption of the 1925 edition of the N. E. C. will be possible and will be made effective at the latest on or about April 1, 1926."

#### 1925 Lamp Sales

The sale of incandescent lamps such as are used in the lighting of homes reached the total of 280,000,000 in 1925, according to the annual review of the electrical industry by John Liston of the General Electric Company. This is an increase of 7¼ per cent over 1924 and over four times the 1908 figure.

# Bare Copper Feeder System for New Skyscraper

Thirty-two Story Telephone Office and Exchange Building Has Interesting Electrical Installation Laid Out to Provide for Maximum Flexibility of Operation

**A** MOST interesting building from an electrical standpoint is now nearing completion in New York. It is the Barclay-Vesey Building and will be used by the New York Telephone Company as an office building and central exchange.

This thirty-two story building occupies an entire block and has an exceptionally heavy lighting load per floor fed from a grid system of distribution in the ceilings. The floors house an underfloor duct system for low tension services only.

The service, being way downtown, is 110-220 volt direct current which means copper leads at the entrance such as one is accustomed to see ordinarily only in power plants.

Finally, the feeder system is novel in that bare solid copper rods are employed.

As one looks at the shiny copper bars running from service board to main switchboard and the bare copper feeders twisting and turning where only conduits are ordinarily seen, one begins to think of the building as a copper mine.

The engineers in laying out the job—Meyer, Strong & Jones—after receiving the electrical requirements from the telephone company's engineers went ahead to provide an installation that was entirely suitable to the type of occupancy and was flexible. The work was installed by Hatzel & Buehler, Inc., electrical contractors, who have had to handle a job involving a lot of new ideas and conditions. An inspection of the work, however, impresses one greatly. The build-

ing which is already a skymark was designed by McKenzie, Voorhees & Gmelin.

The first floor is devoted to stores, a bank, commercial offices, etc., while the next nine floors are set apart for telephone exchanges, the remaining floors being for offices.

The building cannot be added to and the electrical load is pretty definitely fixed, being about one-half lighting load and one-half elevators, ventilating motors, pumps, etc. This does not take

into account the telephone central office power which ultimately will about equal the building light and power load. Nevertheless, space has been provided for additional feeders and risers.

Flexibility of wiring facilities is necessary in a building of this nature because of the more or less minor changes which are sure to be made every once in a while in the location of partitions, office space and desks. Thus it will be more economical in the long run to increase the first cost somewhat for lighting outlets and runs of conduit and to lay down a comprehensive under floor duct system with plenty of inter-connection boxes and junctions. It should be borne in mind that flexibility must be provided so that the service to the tenth floor, which initially will be used as offices, can be economically converted to telephone central office use.

Bearing these general requirements in mind, the following discussion of the electrical installation in the Barclay-Vesey Building will be the more significant.

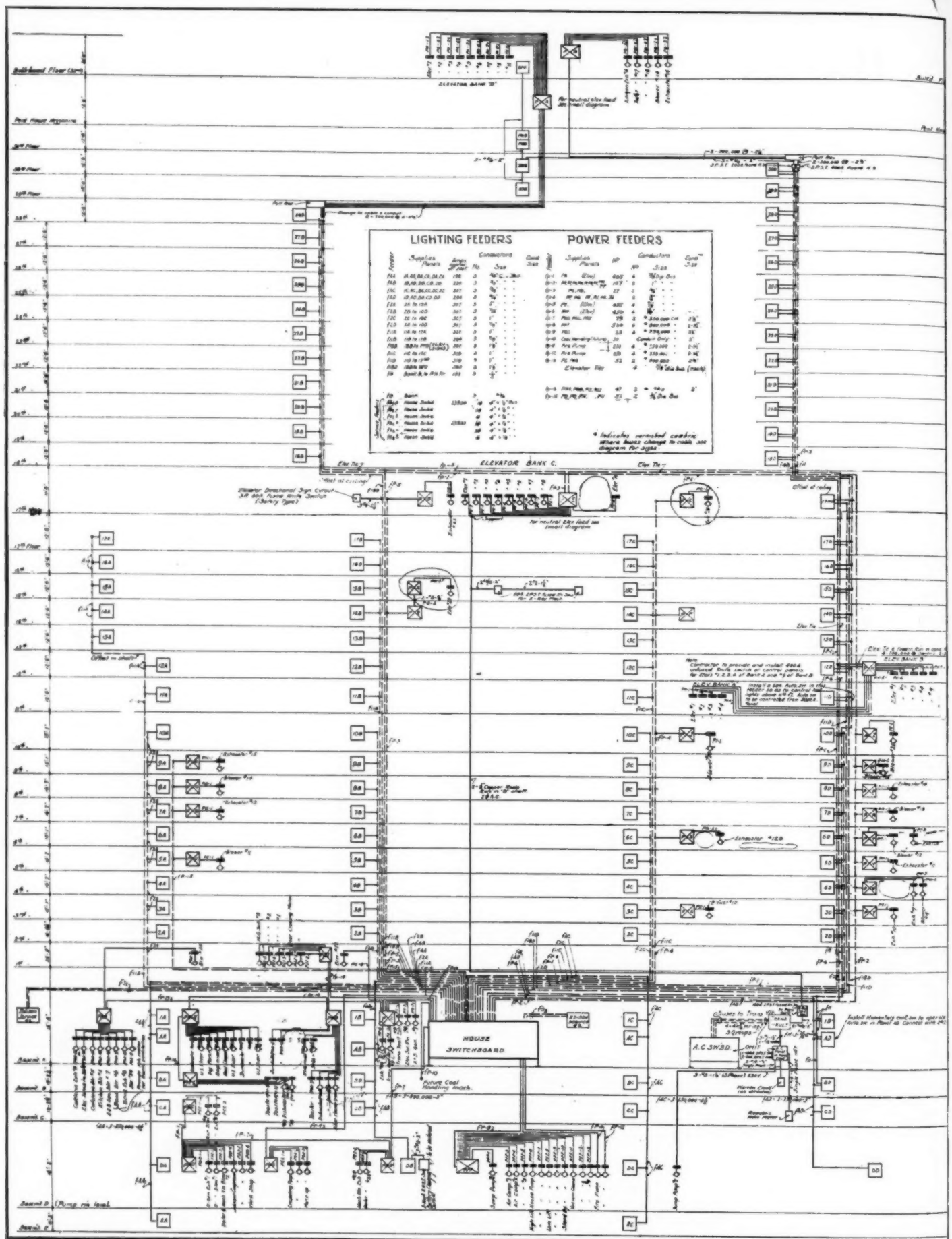
## Service

There are three separate entrances in the basement, two 110-220 volt d. c., and one 220 volt 3-phase 60 cycle a. c.

The two d. c. services are fed from points in the Edison street network so that in case an interruption occurs in one feeder the other will automatically be switched on. These services are brought in at widely separated points to provide additional reliability which is a matter of utmost importance in a telephone building. There will also be two A. C. service entrances for break down service and



New Thirty-two Story Telephone Building Erected in New York



for central office power. There are twenty 4-inch conduits in each of the d. c. entrances.

The entrance cables are terminated at service boards located in the basement (see Fig. 1). The current is carried from each of these to the house switchboard by means of fourteen positive, fourteen negative and four neutral 4 by 4½ in. bus bars, and having an allowable current carrying of 13,800 amp. It is from this switchboard that the risers to the various points of distribution are run. This switchboard is very interesting and complete and will be described in detail in a later article. The risers, being one of the distinctly new features of the building, so far as the commercial electrical installation is concerned, will, however, be given first consideration.

The principal advantages of using bus bar risers; that is bare copper rods, instead of insulated cables are as follows:

Conduits may be dispensed with, rubber insulation and braids are unnecessary, the conductors, being bare, may be operated at heavier current density, they are easy to install and it is a very simple matter to tap them for the supply of the distributing panels at each floor; furthermore this scheme permits of great flexibility in distributing the electrical load between the various risers, as we shall see.

There are several bus bar circuits in each group located in shafts as shown diagrammatically in Fig. 2 and the panel boxes at each floor are located in these shafts close to the risers so that the taps from the risers to the boxes may readily be shifted from one set of bare copper rods to another.

It is to be expected in undertaking a new method of wiring, such as this, that several new problems would be encountered. Practically all of these were foreseen before the work was started and tests were made in advance by Hartzel & Buehler through the agency of the Electrical Testing Laboratories of New York.

Where the conductor consists of a rigid bar, in some cases over two hundred and seventy feet long, the amount of expansion and contraction to be expected is an important matter. This effect is due to the temperature changes from the seasonal variations and also to the heating from the current being carried. This last item was also one

which required laboratory determination.

Obviously, in order to provide for the expansion and contraction, which is bound to take place, it is advisable to support the rods only at the top, and as some of them weigh as much as 1,035 pounds a piece, it was felt necessary to test out the design for the supports rather carefully so as to make sure that failure would not occur. In addition to this it was necessary to provide separators for the rods at each floor.

Five sizes of rods were used which,

tween the current-carrying conductors.

Almost all of the supports are located at two levels—at the mezzanine just below the eighteenth floor and at the top of the building. Those which serve the floors below the mezzanine do not extend above it. Those which serve the upper floors are installed in shafts having an offset from those below, thus necessitating a horizontal run on the mezzanine floor. It is to be noted that none of the bus bar riser circuits terminate at intermediate floors except in a few special instances. They all go to

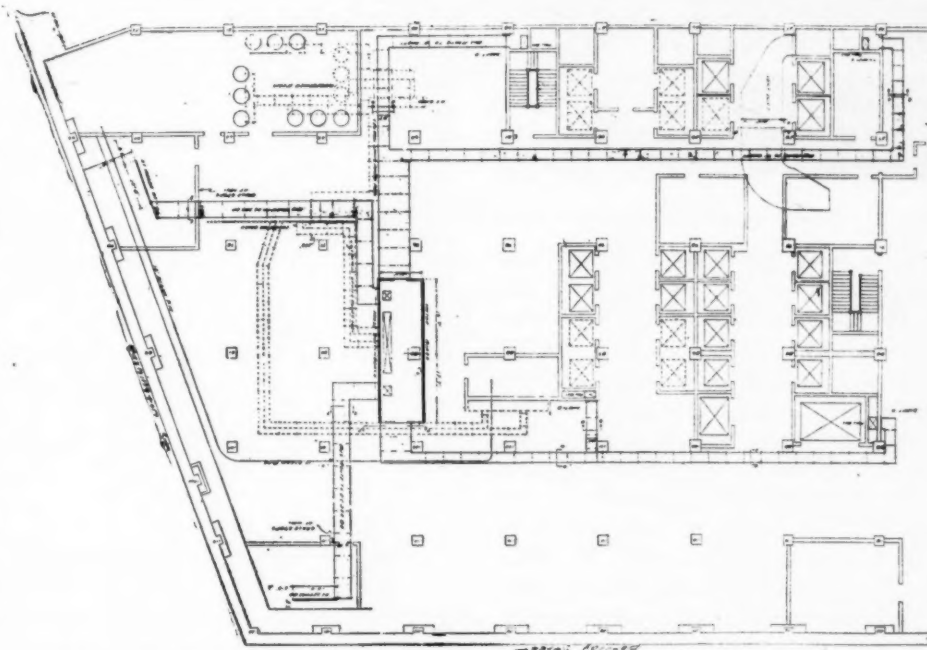


Fig. 1. Bus Bar Routes From Service Entrance to House Switchboard and Risers

together with their weights as supported at the seventeenth mezzanine floor, their length being 270 feet, are as follows:—

Diameter	Weight
½ inch	205 lbs.
¾ inch	460 lbs.
7/8 inch	626 lbs.
1 inch	818 lbs.
1 1/8 inch	1035 lbs.

The tensile strength of the rods and the couplings was another detail which had to be studied to make sure that they would not break from their own weight; and the conductivity of the couplings was carefully ascertained and a design adopted which would obviate unnecessary heating and electrical losses.

Another point which received preliminary consideration was the separation required between the bars on account of the electro-magnetic action be-

the mezzanine and a certain portion of them go to the top (see Fig. 2). This arrangement has the advantage of providing for the maximum of flexibility in evenly distributing the electrical load between the different circuits, because any of them can easily be tapped at any floor.

The appearance of the supports is shown in Fig. 3. They consist essentially of a heavy piece of slate supported by longitudinal channel irons and cross pieces of flat steel on edge in grooves cut in the slate between each set of bars. The latter pass through holes drilled in the slate and are held from slipping through by caps. The details are shown in Figs. 4, 5 and 6. That these supports must have great strength will be apparent when it is realized that a maximum weight of 12,900 lbs. is carried by one of them at the mezzanine floor.

Referring to Fig. 4, it will be seen

that the support consists of an upper piece of slate drilled with holes through which the bars pass and a similarly drilled lower piece of slate. These are held together by through bolts. In grooves made in both of these plates are placed flat irons set on edge and extending beyond the plates so as to rest on

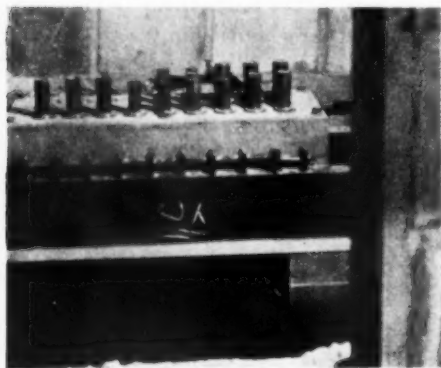


Fig. 3. Riser Support on Mezzanine Floor

the main channel iron. Fig. 5 shows the location of the through bolts and of the flat irons—one of the latter being placed between adjacent rows of three holes so as to take as much strain from the plates as possible. Fig. 5 also shows the long through bolts passing through the ends of all the flat irons to hold them in strict alignment. In addition to this, as is plainly shown in Fig. 6, U bolts are provided to clamp the assembly firmly to the channel iron.

This covers the supporting structure. The manner in which the rods are held is very simple. The end of the rod has a machined thread over which a sleeve is screwed. This sleeve rests on a brass

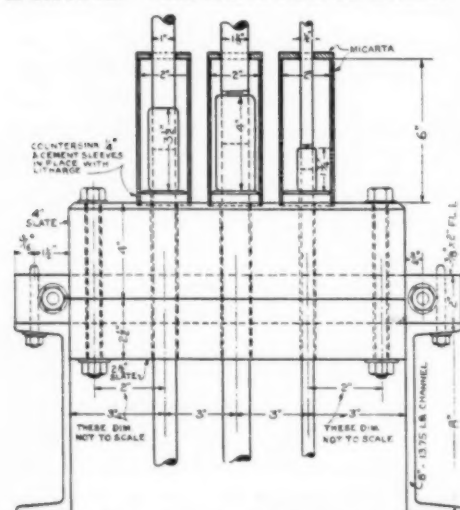


Fig. 4. End Elevation of Supporting Slab and Channel

or copper washer which is seated in a slightly counter sunk hole as shown in Fig. 6, but the hole in the washer is not

large enough to permit of the passage of the sleeve through it. A loose micarta sleeve covering the joint sets in the counter sunk hole in the slate, as shown in Fig. 4.

The copper bars may be carried above the support for accessibility in testing or, as is the case for those circuits extending above the mezzanine floor, for the short horizontal run to the shafts for the risers to the upper floors.

It should be remembered that the strength of the threads, sleeves and other details of this support were tested beforehand wherever any doubt existed as to the efficiency of this method. All of the rod couplings were designed so that the shearing strength of the threads would be greater than the tensile strength of the solid bars. With the

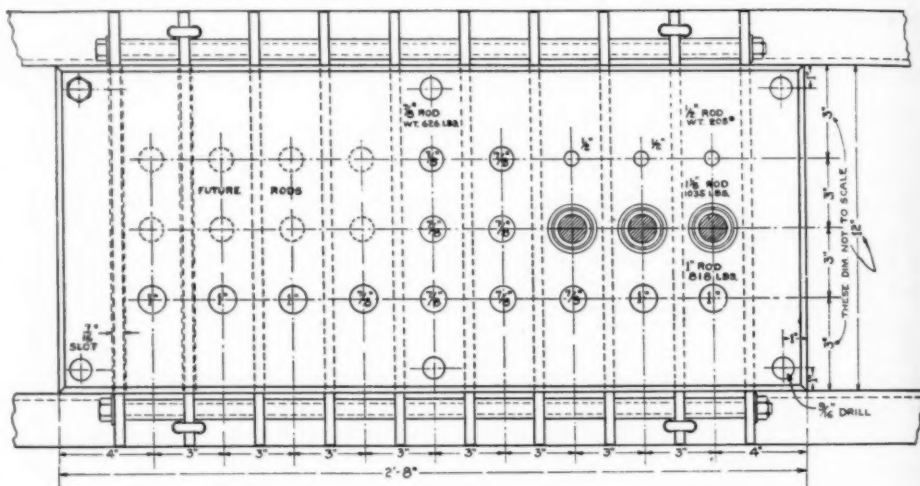


Fig. 5. Plan of Slate Bus Supporting Slab

This shows condition at the Mezzanine floor in D shaft where the maximum number of rods will be supported, weighing 12,900 lbs.

supports once in place and the first (top) section of the bar installed it was a simple matter to install the rest. A slate separator is located at each floor and in some high stories between floors. The separators are drilled similarly to the supporting slate. This is shown in Fig. 7. The rods are all in twelve-foot lengths which is such that although the couplings do not always come at the same point they never come too close to the slate separators. These couplings are cup shaped at the top so that melted solder may readily be poured in. During this pouring process the joints were heated by two heavy duty gasoline torches and the solder poured in until it issued from the bottom of the sleeve.

As will be seen from the illustration (Fig. 7) each rod is provided with a loose micarta sleeve six inches long which sets into a counter sunk hole in the slate separator. The purpose of

these sleeves is simply to prevent short circuits, or high resistance leaks, from foreign matter which might collect on the separator.

The whole group of vertical bus bars is protected at each floor by a grill 7 ft. high. The shafts are entered through Dahlstrom fireproof doors at each floor.

It is thus evident how the bus bars hang freely from the top and that there is no obstruction of any kind to cause trouble from variations in their length due to expansion and contraction from changes in temperature. The horizontal runs are connected to the riser by means of flexible cables to provide for variation in length.

These are made with a large number of comparatively fine strands. They are covered with "slow-burning" insul-

ation and have the same current carrying capacities as the bars to which they are attached, due allowance being made for the greater heating which takes place in a covered conductor than in one which is bare. The connections are made by means of Dossert connectors.

The horizontal runs, one of which is shown in Fig. 8 and another in Fig. 9, are supported by slate and are protected by wire mesh on the sides and a metal plate on the bottom of the run. The method of support is shown in Fig. 10. The horizontal couplings are made and soldered, or "sweated," in the same way as the vertical ones already described, except that in the latter operations they are drilled at each end and molten solder is poured in at one hole until it overflows from the other.

In addition to the two points of support for the vertical risers there is another at the tenth floor for a series of

buses used solely to supply power for the operation of the telephone exchanges to be located on the lower floors of the building. These, however, have nothing to do with the lighting load and will not be treated here.

The layout of the horizontal bus routes from the house switchboard in the basement to the bottom of the risers is shown diagrammatically in Fig. 1. This figure, together with the photographs (Figs. 8-9), shows a number of other interesting details which bring out several points peculiar to this job—in other words, the "local conditions."

In the first place the location of the two service entrances are below the water line in this part of the city and great care had to be taken to prevent leaks.

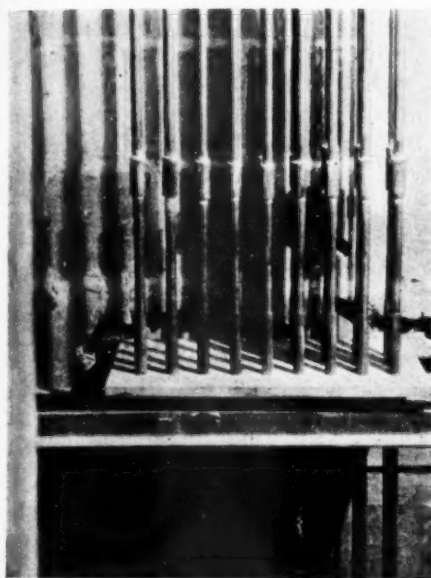


Fig. 7. View of Slate Separator, Micarta Sleeve and Couplings

Furthermore, it will be seen that Fig. 1 shows only one corner of the building and the central core, extending from basement to roof, and in which are located the elevators, stairways, toilets and shafts for steam pipes and electrical feeders. The space on one side of this core, between shafts "C" and "D," is reserved exclusively for the telephone cables, which accounts for the otherwise apparently peculiar arrangement of bus bar routes to these two shafts. The routes to shafts "A" and "B" are also shown and will be seen to follow the most direct and logical paths.

One of the major practical difficulties of installation was to avoid interference with the work of the other trades under the basement ceiling. Figs. 8 and 9 show how the runs had to be offset ver-

tically on account of ventilation flues and in addition to this there was a good deal of steam and water piping which had to be avoided. It was, therefore, necessary to study the situation by means of composite drawings on which everything was shown to make sure that

the other hand, the available space was limited by other considerations and the amount finally allotted was about 4 by 8 ft.

The sizes of the bus bars vary just as would be the case with insulated cables and for similar reasons.

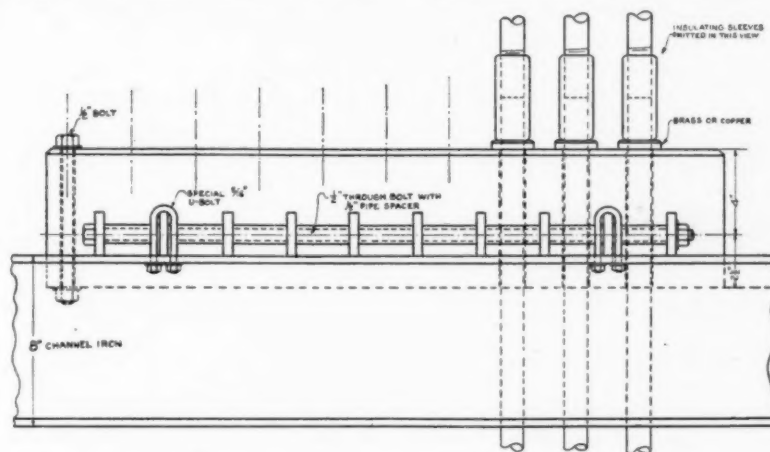


Fig. 6. Side Elevation of Supporting Slab and Reinforcing Bars

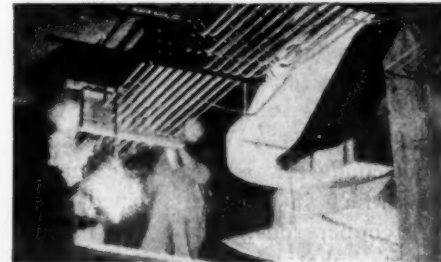
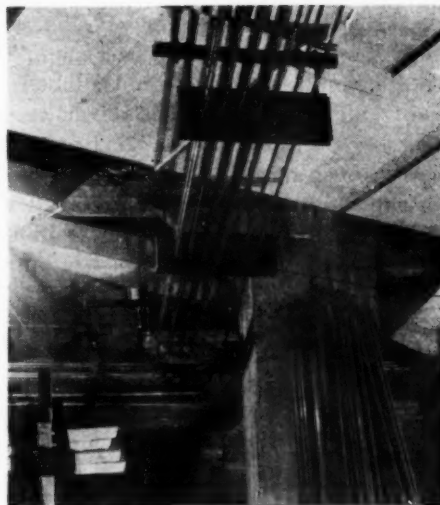
there would be sufficient room. This involved close cooperation between the trades.

The riser diagram shown in Fig. 2, together with its associated table, gives a good idea of how the various circuits in each shaft are tapped to supply the panels at each floor, the elevators and the blowers.

It will be noted from all of the pictures of the risers that spare space has been provided for additional circuits in case future developments should make them necessary.

The principle by which the sizes of the lighting buses were determined was by the known requirements of other telephone buildings as shown by past experience. This was on the basis of approx 145 watts per 100 square feet of gross floor area and of approx 190 watts per 100 square feet of productive floor space. The total area of each floor was divided between the four shafts on the floors below the eighteenth and two shafts on the floors above the eighteenth.

The distribution panels are mounted



Figs. 8 and 9. Horizontal Bus Bar Runs in Basement

Note method of support, room for spares, bends and offsets.

in the riser shafts of which, as already stated, there are four up to the eighteenth floor and two above. In some cases these boxes are mounted on vertical angle iron supports, as shown in Fig. 11, which are attached to the floor beams and extend the full length of the shafts. This has proved to be a great convenience in many ways as, among other things, it was not necessary to

wait until the walls were completed to mount the boxes.

There were certain peculiarities in this building, especially on the floors used for telephone exchanges, which are worth noting. Fig. 12 shows part of the conduit layout on one of these floors and it will be observed that the home runs of conduit to one of the shafts are

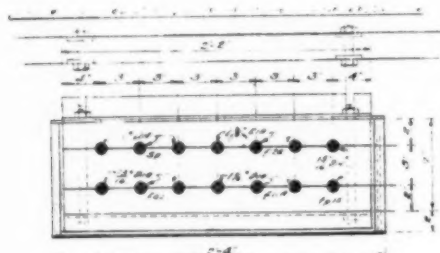


Fig. 10. Method of Supporting Horizontal Runs

not direct, as would ordinarily be expected, but are run from a pull box. The reason for this is that the side of the central core of the building which would have to be pierced by the home runs is taken up with conduits for telephone cables and cannot be broken into. It is, therefore, necessary to go around this and the only practicable method is to use a pull box as shown in Fig. 12. Another pull box is located in the shaft above the panel because the direct run of conduits from the first pull box to the panel is obstructed by a large girder.

The other shaft shown in Fig. 12 is not so obstructed and the home runs to that panel are made direct without any pull boxes.

Taps are taken from the bus bars and run into the tops of the panel boxes as shown in Fig. 13. These taps consist simply of No. 1 A. W. G. solid weather-proof conductors soldered to clamp fittings which in turn are sweated to the bare copper rods; but it will be seen from the photograph that they are kept high up out of the way and so that they may be run into the top of the box.

The boxes used are the General Electric sectional type varying in size from ten to seventy-four circuits. They are provided with NEC cartridge fuses and 30 amp. branch circuit switches, and lugs only in the mains.

The method of distribution in the office space is that known as the "Grid" system. With this arrangement there is a source outlet in the ceiling near each column, but out of the line of any future partitions which may be placed be-

tween them. It is shown in diagrammatic form for a part of one of the floors in Fig. 12. The size of the conduits is also shown in this diagram. It will be seen that the outlets are tied together with conduit and that there is a "home-run" of conduit to the panel or pull box from the nearest of these outlets or "junctions." The general lighting fixtures, switches and receptacles, wherever located, are fed from these junctions which are 6 in. square. It will be evident that the installation is very flexible and that by this means a minimum amount of cutting away of plaster will be necessary when making changes in the future lighting which cannot now be foreseen.

The principle followed in gaining the desired flexibility in this "grid" system is to provide several routes between any outlet and its panel. In most cases these routes will be of about the same length, although if the congestion in all other home runs makes it necessary, there are always roundabout routes possible. One branch circuit on the panel board is provided for approximately every 400 sq. ft. of floor space and the floor space is conduited so as to provide for two circuits for each 400 sq. ft. of floor space and this in turn may even be increased by adding additional wires through the network of conduits.

The manner in which the wire is installed is as follows:

A diagram such as that shown in Fig. 12 is turned over to the occupant who marks the outlets which he expects to use. He also indicates any preferences which he may have as to the grouping of lights on the branch circuits; that is, there might be some reason why the lights in a certain location should preferably be on one circuit. With this information in hand it is a simple matter for the engineers to plan the installation of the wire in the gridwork of conduits in the most efficient manner and without unnecessarily congesting any particular part of the conduit system.

To show the relationship between the distribution system and the riser system and also to indicate the remarkable flexibility of the whole installation the following analysis will be interesting. There are twelve home runs entering panel 4A. These represent a total capacity of 33 branch circuits, although the panel will accommodate only twenty-four 120-volt circuits. This, of course, carries out the idea of flexi-

bility in the grid conduit system as it may obviously be desirable to concentrate more branch circuits in certain home runs than in others. The twenty-four circuit capacity of the panel has been arrived at by allowing the approximate 400 sq. ft. of floor area per branch circuit already mentioned.

Panel box 4A is connected to riser circuit f2A which is composed of rods one inch in diameter and carries the load of nine similar panels. According to the table this circuit will carry 507 amperes at 240 volts for the nine floors served by this riser circuit. This means 56 amp. per panel or approximately  $21\frac{1}{2}$  amp. per circuit or  $1\frac{1}{4}$  watt per square foot, probably resulting in a working load in feeders of one watt per sq. ft. or less. It is, therefore, evident that the diversity factor and the allowance for the number of branch circuits is such that only a small average current per circuit is expected. Of course, this is because of the large number of branch circuits provided for, and if fu-



Fig. 11. Showing Panel Movement on Angle Irons Which Extend Full Length of Shaft

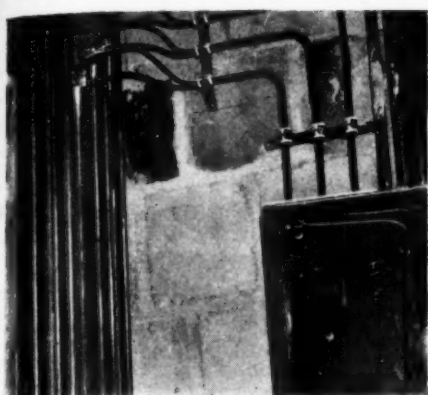


Fig. 13. Taps From Bus Bar Risers to Panel Box

The taps are No. 1 A. W. G. solid, weatherproof wires soldered to clamp fittings which are sweated to the copper rods.

ture requirements should cause a general increase it would not be difficult to install an additional riser in the spare space alluded to; or, if the increases are only in spots, to rearrange the taps feeding the panels.

The current of 507 amp. which feeder f2A is to carry is based on the maximum load of late afternoon in winter and the size of the feeder is such that the maximum voltage drop will be about 2 percent under these conditions.

The wire which has been installed in the conduits between the panel boxes and outlets is No. 12 or 14 A. W. G.

#### Telephone Distribution System

The telephone distribution system is also very complete and up to date. It is fed from distribution boxes located at shafts about 6 by 5 ft. in size at every floor. There are four of these groups per floor up to the eighteenth and one for the other floors.

From each distribution box,  $1\frac{1}{4}$  in. iron pipes are run to several inter-connection boxes varying in number from two to seven, and from these there is a network of half round underfloor fibre conduits. This network is laid so closely that it is impossible to place a desk anywhere on the floor without having one end over one of these conduits. While there is nothing peculiar about this arrangement attributable to the telephone business, it is a fact that the telephone distribution system has been made perhaps more than ordinarily complete because of the permanence and well understood character of the occupancy of the building. There is a total of twenty-one miles of this underfloor fibre conduit which was installed by Hatzel &

Buehler in practically six week's time.

Another interesting feature of the low tension distribution system is that on the floors having four distributing boxes certain ones, located diagonally from each other at the corners of the building, are connected by means of two  $1\frac{1}{2}$  in. iron conduits. This is because the floor space covers a whole city block and means of communication may be desirable over a whole floor. Connections between adjacent distribution boxes (at opposite ends of the same side of the building) may be made through the underfloor fibre ducts and cross-connecting boxes. Connection from floor to floor is possible through the shafts by means of small cables.

#### Electrical Prospects in 1926

Increases in all lines of electrical activity may be looked for during 1926, according to a forecast recently made by E. M. Herr, president of the Westinghouse Electrical and Manufacturing Company. Some of the things that will bring this about are improved European conditions, lower Federal taxes and the great prosperity of the steel and building industries.

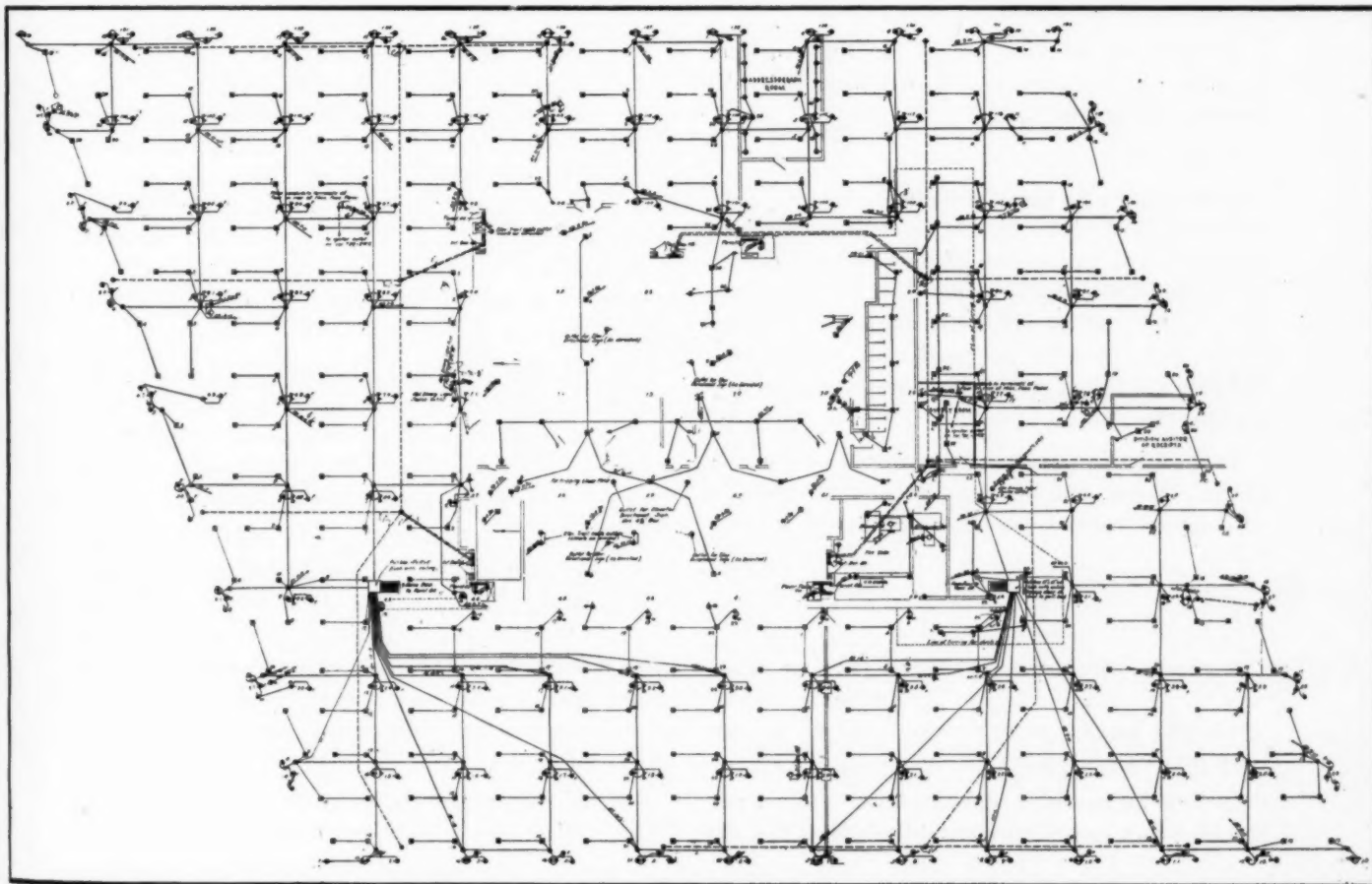


Fig. 12. "Grid" Distribution—Ceiling of Typical Floor

# Majority and Minority on Unarmored

**T**HERE will be presented to the Electrical Committee at its annual meeting this month two sets of proposed rules for the installation of unarmored assemblies, or, as they are called in the reports, non-metallic sheathed cables. One set is the report of Article V Committee, which at the time the report was drawn up received the unanimous approval of all committee members. The other, or minority report, was later prepared by the central station member on the committee.

The majority report, while deploring the use of assem-

blies without metallic protection has prepared rules which retain much of the time honored practice of keeping unarmored conductors from contact with surface wired over, and from being used where it is likely to be subjected to mechanical abuse.

The minority report, on the other hand, insists on the most liberal of rules, treating the cable exactly as though it had the benefit of a protective metal armor. This report represents the central station viewpoint and it will be noticed that having received consent of the Electrical Com-

## Majority Rules Proposed by Article V Committee of of N. F. P. A. Electrical Committee

Art

No.....Non-Metallic Sheathed Cable.

a. Shall not be used except for Lighting and Appliance Branch circuits, not exceeding 300 volts between conductors.

b. Shall be of approved make.

c. Shall only be used in residence buildings designed to be occupied by not more than two families or in any fire section of a residence building designed to be occupied by not more than two families. A fire section within the intent and meaning of this rule includes the portion or section of a building cut off by fire walls from the balance of the building.

d. Shall be run only as concealed wiring in dry places. When run through joists or studding in attic or basement it shall be considered as concealed.

NOTE:—Cables run in close proximity to water pipes or tanks are considered to be exposed to moisture. It is recommended that cables be run over, rather than under, pipes upon which moisture is likely to gather or which may leak.

e. Shall be run without joints, splices or taps from outlet to outlet.

f. Shall be provided with approved outlet boxes at each outlet into which the cable shall be run and

to which it shall be rigidly attached by means of an approved clamp.

g. Shall be separated from contact with walls, floors, timbers or partitions through which they pass by tubes or bushings composed of approved non-combustible, non-absorptive insulating material. If the bushing is shorter than the hole, a waterproof sleeve, such as an iron pipe, shall be inserted in the hole and an insulating bushing slipped into the sleeve at either end and in such a manner as to keep the cable absolutely out of contact with the sleeve.

h. Shall be rigidly supported  $\frac{1}{2}$  inch clear of the surface wired over by means of non-combustible, non-absorptive insulators. Supports shall conform to the requirements for knobs, tubes and bushings, as prescribed in section 501 of this code.

i. Where it is impracticable to employ insulating supports, the cable, if not exposed to moisture, may be fished in continuous lengths from one support to the next or to the outlet, or from one outlet to another; provided the inspector can satisfy himself that it does not come in contact with metal; otherwise, approved conduit or approved armored cable shall be used.

j. All bends shall be so made that the armor of the cable will not be injured and the radius of the

# Proposed Code Rules Assemblies

mittee that the material shall be recognized the utilities are now trying to stretch their inch into a mile.

In submitting the proposed rules to the Electrical Committee the article committee refused to take any of the responsibility for recognizing non-metallic sheathed cable, putting it squarely up to the Electrical Committee. In making this report the article committee had advantage of special tests made for it by Underwriter's Laboratories. In recommending the adoptions of the proposed rules the article committee stated that it felt that it was "making a

most important change in present cable standards, and one that may be regarded by many electrical and insurance men as radical."

The majority and minority suggested rules are given below. They will both be presented to the Electrical Committee at its meeting and in addition there will be presented all of the briefs submitted by interested parties at the Article Committee's open hearing in Chicago on January 25. These briefs will not change the majority report but will be added for the further enlightenment of the Electrical Committee.

curve of the outer edge of any bend shall not be less than one inch.

k. Shall be permanently separated from adjacent metallic piping or other conducting material, or from any lighting, power or signal wire which ap-

proaches within two inches, by a firmly fixed and insulating tube secured at the ends, additional to the insulation on the cable.

l. Shall not be laid in plaster, cement or similar finish.

## Minority Rules Proposed by W. H. Blood, Jr., Member Article V Committee, N. E. L. A. Representative

a. It shall be of approved make.

b. It may be used on circuits where the maximum difference of potential between any two wires does not exceed 300 volts.

c. It may be used in dry places only. It shall not be permitted in stables, laundries, chemical works, or other places where dampness is liable to accumulate. It shall not be laid in plaster, cement or similar finish.

d. It may be run without insulating supports or separators, exposed on woodwork, plaster, cement or brick where these surfaces are always dry. It shall be supported by approved fastenings devices spaced not farther than four feet apart.

e. It may be used in concealed work and may be fished, without supports such distances as will allow an inspector to satisfy himself reasonably that it does not come in direct contact with metal.

f. It shall be run in continuous lengths without tap or joint from outlet to outlet.

g. It shall be suitably protected where subjected to mechanical injury, as on side walls, by one of the following methods:

1—By running boards not less than  $\frac{1}{2}$  inch in thickness and 2 inches in width.

2—By guard stops not less than 7-8 inch in thickness placed on each side of and close to the cable and at least as high as the thickness of the cable.

3—By metal pipe or conduit.

h. It may be used in approved rigid conduit when the regular installation rules for conduit are followed.

i. It shall be provided with approved outlet boxes or plates to which it shall be securely fastened by approved terminal fittings.

j. It shall be so handled that the outside covering shall not be injured. All bends shall be so made that the inside of the curve shall be not less than 2 inches in diameter.

# A Plea for Cheaper Wiring and a Reply

Association of Electragists.

Gentlemen:

I recently received in an envelope bearing the imprint of your Association an unsigned folder which it was stated was a reprint from THE ELECTRAGIST.

I feel that the attack on the Underwriters' Laboratories and the so-called Romex wire is entirely uncalled for and does not indicate the breadth of vision that one might expect from your Association.

If there be a safe method of wiring which is cheaper than the present one, your Association should get behind it and assist in securing any necessary approval. It would seem that the high cost of wiring was one factor which was holding back the complete wiring of the homes of this country.

Your circular has caused me to take up the question of at least experimental installations of this new type of wire in territory served by this Company.

Yours very truly,

The Hartford Electric Light Co.

(Signed) A. D. Colvin,  
General Manager.

Hartford, Conn., Jan. 14, 1926.

January 16, 1926.

Dear Mr. Colvin:

I have your letter of January 14th in regard to an editorial which appeared in the December issue of THE ELECTRAGIST criticising the Underwriters' Laboratories for issuing a very misleading announcement on a product which is not approved for use by our National Electrical Code, and which was seized upon, as expected, by the manufacturer of that product and widely advertised in a still more misleading way.

For twenty-five years this Association has steadfastly worked for the establishment of sound standards in wiring methods and practices, and the establishment of those standards through the electrical industry's legislative body, the National Electrical Committee, and through the National Electrical Code which that body develops.

Our industry may be compared with

our own United States and its Congress; minorities of the people may from time to time be not in full accord with the laws which Congress lays down, but unless they were willing to abide by those laws until public sentiment in orderly procedure has the laws changed and new regulations enacted as the will of the majority, only contempt of the law and anarchy would follow.

It is difficult for me to understand the attitude of your Company in your announcement that you intend to disregard the National Electrical Code and use an unapproved product in your territory without being willing to wait until the industry's congress, the National Electrical Committee, meets next month to determine status of this new product.

The vigorous stand which this Association has taken in the editorial which you question is not an attack upon any new product, but is an appeal against the breaking down of our National Electrical Code and its disregard by the Underwriters' Laboratories, or by any individual interests in the industry.

If the Code should be changed, let us change it—but until it is changed in such an orderly manner that it may retain the approval of the American Engineering Standards Committee as an American Standard, let us respect it, and not encourage "bootlegging."

This Association does not believe that multiple assemblies of non-metallic sheathed cables are a safe method of wiring. If we believed this new material was sound and safe, we would welcome it irrespective of cost. We believe, however, that such a material means the lowering of some of the most fundamental Code standards for protection of life and property. . . . .

In your letter you state "it would seem that the high cost of wiring was one factor which was holding back the complete wiring of the homes of this country." What evidence has the N. E. L. A. found that this is so?

This premise is not borne out by the history of any feature of the homes which are being built throughout our country today. Do you believe that

there would be more plumbing and bathrooms if we went back to the "tin-tub days"? The tremendous growth in plumbing installations in our generation, and the universal adoption of fully equipped bathrooms, kitchen and laundry sinks and tubs, etc., have resulted not from a cheapening of those products, but because of the placing of them on a quality basis at a profitable point that has encouraged manufacturers, distributors and plumbing contractors alike to place sales effort behind the installations, and created a continual education of the public.

The Central Stations are seeking additional load upon their lines, greater consumption of current by the public, with increased light bills. Are they disregarding the character of equipment supplied the public for the use of that current? Do they advocate the use of the cheapest refrigerator, the cheapest iron, the cheapest appliances, in order to encourage increasing load, or are they encouraging the use of the best equipment for permanent satisfaction?

Then why are the Central Stations advocating the cheapest forms of wiring, rather than building for a permanent satisfaction in wiring installations?

When the Central Stations of this country stop calling for cheaper wiring and call for higher quality of wiring—when they place their wiring campaigns on a basis where responsible and established electrical contractors are encouraged to participate instead of appealing only to the inexperienced beginners who see a day's wage livelihood in the wiring program and whose whole psychology is "Cheap", without any courage to sell the customer the thing you are seeking—"The complete wiring of the homes of this country"—then will we attain that complete wiring.

It seems to me that there is need today for a joint conference of the industry, and a frank and clear exchange of viewpoints in order that this industry may go forward on a united program.

Yours very truly,

(Signed) Laurence W. Davis,  
General Manager.

# Reinspection Saves Money for Taxpayers

By S. B. WILLIAMS, Editor THE ELECTRAGIST

EVERY time a fire breaks out in New York City it costs the taxpayers \$800.

Every fifth fire in New York City is of unknown origin.

Two percent of the fires of unknown origin in one year occurred in buildings that had been bulletined by the Board of Underwriters as having unsafe electric wiring.

Three percent of all buildings bulletined as unsafe electrically will have a fire of electrical or unknown origin before the year is over.

These aren't merely intelligent guesses; these are facts dug out by the writer with the aid of the New York Fire Department and J. C. Forsythe, chief electrical inspector for the New York Board of Fire Underwriters, in an effort to find out whether or not reinspection of electrical equipment was of economic advantage to the public.

Fire is an economic waste from at least three angles—

1—Actual loss of property

2—Fire fighting costs

3—Loss of labor of

(a)—Those in burning premises

(b)—Those attracted out of curiosity

The figures that accompany this article all relate to property situated within the five boroughs of New York City. It is presumed that conditions elsewhere are comparable.

The most serious fire that any city has to fight is that of unknown origin because it is so large—so large that it has destroyed all means of detecting its origin.

Eighty-one such fires occurred in New York last year in buildings that had previously been bulletined by the Underwriters as having unsafe electric wiring. In addition there were twelve electrical fires in bulletined buildings. These latter were not large—only \$3,500—because they were caught in time.

There were over 4,000 fires of unknown origin with a property loss aggregating \$12,800,000 or 70 percent of the total fire loss.

It costs the city approximately 95 cents per dollar loss to fight fires which means that unknown fires cost taxpayers over \$12,000,000.

The average loss per fire of this nature is \$3,000 in property and \$3,000 in fire fighting cost or \$6,000 total. Thus the 81 that occurred in bulletined buildings cost \$486,000. Add to this the \$3,500 property loss in twelve electrical fires in bulletined buildings and the fire fighting cost makes a total cost to taxpayers and property owners of approximately \$500,000 for fires in one year in buildings bulletined as having unsafe electrical wiring and equipment.

The New York Board of Fire Underwriters has in its

electrical department a branch devoted to reinspection. In it are ten inspectors and one supervisor. The total cost for this work, overhead and salaries, is \$35,000 a year.

These men in 1925 reinspected the equipment of 11,719 users of electrical energy. Of these 6,985, or 60 percent, had defective equipments. Most of these were corrected soon after notification by the underwriters. Nevertheless some 1,197 were bulletined. That is, the insurance com-

## NEW YORK CITY FIRE STATISTICS

Fire Loss (1924) .....	\$18,700,000.00
Fire department budget (1924) .....	17,900,000.00

Number of fires .....	22,631
Cost to taxpayer per fire .....	\$800.00
Cost to taxpayer per dollar of loss .....	80.95

Loss from fires of unknown origin .....	\$12,800,000.00
Percentage of total loss .....	70%
Number of fires of unknown origin .....	4,389
Average loss per fire of unknown origin .....	\$3,000.00
Percentage of total number .....	20%

(Note—Every fifth fire is of unknown origin)

Total electrical consumer premises reinspected (1925) .....	11,719
Number found defective .....	6,985
Percentage .....	60%
Number bulletined as uncorrected .....	1,197
Number corrected after being bulletined .....	815
Number now on bulletin .....	3,200

Number of fires of electrical origin in bulletined Buildings .....	12
Total loss .....	\$ 3,525.00
Number of fires of unknown origin in bulletined Buildings .....	81
Estimated loss .....	\$243,000.00

Total cost to New York taxpayers and property owners in one year for fires of electrical and unknown origin in buildings bulletined as electrically unsafe .....	\$500,000.00
--	--------------

Number of men making reinspection .....	10
Cost of reinspection .....	\$35,000.00

panies were notified that the electric equipments in those premises were unsafe.

During the year, 815 previously bulletined equipments were repaired and so removed from the list. At the close of the year there remained 3,200 consumers on the bulletined list.

These ten men can only just scratch the surface, but it is apparent that they are needed. They secured the improvement in all of 6,600 unsafe electrical installations, each of which was a definite fire hazard.

The property losses are largely covered by insurance, but the policyholders really pay for these losses. The

cost of fire fighting is covered by no insurance; it comes out of the pocket of the taxpayers.

Finally, there is the loss in productive labor. A fire in a building, if of the size of the ordinary one of unknown origin, will throw all the people in the building out of work for periods of varying lengths of time. This is an economic loss not only to the individual, but to the public as well.

Every fire brings its rush of the curious. There is something thrilling in the clamor of the fire apparatus. Each person who stands to watch the firemen at work—and what fire doesn't have them—represents lost time that might

otherwise be spent in productive effort.

In reckoning the cost of fire, therefore, one must look further than property loss, but take all other economic losses into effect as well.

Electricity is a cause of fires. When properly safeguarded and not mistreated electrical equipments are safe. It is when added to or altered by unauthorized persons or improperly maintained that it becomes a fire hazard.

One hundred and forty-four thousand six hundred and eight-five dollars represented the electrical fires from such equipment in 1925 in New York—76 percent of the total electrical fire loss.

## How Do Your Foremen Stack Up?

Seventy-four Ways to Test a Foreman's Ability to Represent You on the Job, to Work for Your Interests and to Cut Down Waste in Labor

**I**S YOUR foreman fitted for the job? Can he get work done well and with the minimum of lost motion?

Can he keep the labor cost on a job down to or below the estimate?

Can he get good men when he needs them, or do men hate to work under him?

Can he represent you on the job, when the customer appears?

There are ways of finding out. Following are seventy-four points on which foremen can be tested. It might be interesting to test out your men—to find out for instance which foremen have the least labor turnover, etc. Men who do not rank high in some items can be taken to one side and talked to—it will make better foremen out of them.

The items were compiled by the United States Chamber of Commerce from a number of training courses.

- 1.—Personality
- 2.—Leadership
- 3.—Ability
- 4.—Investigation Before Conclusions
- 5.—Decision or Snap Judgment
- 6.—Tact and Diplomacy
- 7.—Resourcefulness
- 8.—Originality
- 9.—Inventive Ability
- 10.—Imagination
- 11.—Enthusiasm—Is it Contagious?
- 12.—Adaptability to Conditions
- 13.—Initiative

- 14.—Open-mindedness
- 15.—Willingness to Accept Suggestions
- 16.—Systematic or Haphazard
- 17.—Physical Fitness
- 18.—Mental Alertness
- 19.—Character
- 20.—Habits
- 21.—Utilizing Time
- 22.—Knowledge of Job Analysis
- 23.—Knowledge of Men
- 24.—Developing Men
- 25.—Developing Interest
- 26.—Training Workers
- 27.—Starting the New Man
- 28.—Getting Team Work
- 29.—Labor Turnover
- 30.—Safety and Accident Prevention
- 31.—Maintaining Discipline
- 32.—Attendance
- 33.—Taking Orders—Directions—Suggestions
- 34.—Securing and Using Suggestions
- 35.—Coaching an Understudy
- 36.—Production per Worker
- 37.—Loyalty to Management and to Men
- 38.—Honesty and Square Dealing
- 39.—Knowledge of the Law
- 40.—Ability as an Inspector
- 41.—Ability as a Stockkeeper
- 42.—Ability to Take Inventory
- 43.—Knowledge of Costs
- 44.—Extent of His Waste
- 45.—Extent of His Production
- 46.—Knowledge of Position and Job

- 47.—Methods of Getting Production
- 48.—Flow of Work
- 49.—Departmental Relationships
- 50.—Loss Through Spoiled Work
- 51.—Keeping Equipment in Order
- 52.—Records and Reports
- 53.—Improving Workmanship
- 54.—Receiving and Storing Material
- 55.—Issuing Material
- 56.—Movement of Material
- 57.—Employment — Right Man in Right Job
- 58.—Non-Wage Incentives
- 59.—Ability to Make Time Studies
- 60.—Can He Rate Employees
- 61.—Promotion
- 62.—Does He Discharge or Transfer?
- 63.—First Aid
- 64.—Does He Know Organization of the Company?
- 65.—Making the Organization Effective
- 66.—Purpose of Planning
- 67.—Knowledge of Manufacturing Costs
- 68.—Knowledge of Selling Costs
- 69.—Knowledge of Sources of Material
- 70.—Knowledge of What Production Is and Who Produces
- 71.—Knowledge of Factors in Production
- 72.—Production and the H. C. L.
- 73.—What is Included in Overhead
- 74.—Economics of Our Business

### A. L. Swanson, Evansville

WHEN an ex-President of a local Rotary Club is called "Shorty" by his fellow members, he is definitely assured of their regard and respect. And it is the good fortune of A. L. Swanson to be known as "Shorty" among his business associates in Evansville, Indiana. Mr. Swanson was born in Evansville in 1876 and has stuck to that Indiana city ever since. Immediately after finishing public school, he went to work for the central station, installing 2-wire, 110 v., d. c. isolated plants, wearing a belt that contained wood cleats in one pouch and nails in the other. After helping to electrify the city railways, he attended Armour Institute of Technology in Chicago. As soon as he finished there, he entered the electrical installation business on his own, with a grand total of forty square feet of floor space as office, shop, and warehouse, his engineering problems being mainly door bell installations and automatic gas lighting problems. Before long, however, he had to double his organization by adding the services of one helper. Nowadays the Swanson Electric Company does an annual business of \$300,000 and is divided into six departments—radio, appliance, contracting, fixtures, repairs, and wholesaling. His company attracts business from a trade territory of several hundred square miles and keeps sixty employees busy throughout the year. Mr. Swanson has always been active in association work, local, state, and national and has been a member of the A. E. I. since its early days. He is a Shriner, a Rotarian, and an influential Chamber of Commerce member. His only ambition in life, however, according to his own confession, is to accumulate enough money to own a cow, and his hobby is talking washing machines.



## Electragists You Should Know

### S. E. Jarvis, Vancouver

S. E. JARVIS, President of the Jarvis Electric Company, Ltd., Vancouver, B. C., lists among previous occupations such things as fisherman, sailor, grocery clerk, gas fitter, and waiter in a restaurant. For the last twenty years, however, his specialty has been successful electrical contracting. He was born at Augusta, Wis., in 1884, of Canadian parents, who returned to Canada in 1891. His education was obtained in the public schools of Picton, Ont., while his first electrical experience was gained in British Columbia, where he worked as apprentice to Cope & Freyn at a salary of three dollars a week. This was in 1903 and by 1910 he had become superintendent of the concern. In 1911 he established his own business, the combined capital of his partner and himself being \$1,000. The company was later incorporated under the present firm name. It has expanded steadily and now occupies a store on the main business street of Vancouver. The staff numbers thirty people. Mr. Jarvis is a past-president of the local association of contractor-dealers, a member of the local service league, and has always taken part in any co-operative movement for bettering the industry. He belongs to the Board of Trade and the Automobile Club. His domestic hobby having to do with bees, he may be found, any fine Sunday in the summer, with bee-veil and smoker, examining his several thousand pets. He is an enthusiastic booster for the West, and particularly for British Columbia. Traveling salesmen are familiar with his declaration, "I would rather starve in British Columbia than live in opulence in the East." But so far there seems little danger of British Columbia starving him.



# Shall the Price-Slashers Be

**T**HE question of Federal resale price legislation is in the spotlight again! The United States Chamber of Commerce first started an investigation of the matter in 1916. The war came soon afterward, putting a stop to all work not directly connected with the conflict. Until 1921 demand was so strong that the question of price meant little to anyone. Since then business has been settling back to normal conditions and once again the United States Chamber of Commerce is asking its members whether or not it should recommend a Federal law permitting the manufacturer of trade-marked goods to control resale prices.

A committee of the chamber has submitted a majority report favoring the proposition and the questions being voted on by the members are, briefly, these:

1. Shall there be Federal legislation permitting the seller of trademarked goods to control resale prices?
2. Shall the legislation take the form of permitting contracts between manufacturer and dealer for the maintenance of resale prices on such goods under proper restrictions?
3. Shall the cutting of the seller's declared prices, resulting in misappropriating or injuring good will attached to trade-marked articles, be considered of unfair competition?

From the standpoint of the electrical contractor-dealer, such legislation would be of inestimable value. Any doubt of this should be removed by the fact that the leader of the opposition forces is the National Retail Dry Goods Association. The electrical dealer who tries to make a legitimate profit on nationally-known trade-marked goods has no more unfair competition than that of the department stores form-



Above are just a few samples of how department stores and cut-throat competition. If there had been sufficient space, more than fifteen others of the newspapers in 33 different cities. From left to right the special advertisements are from Famous & Barr Co., St. Louis, Mo.; H. F. Pogue, Buffalo, N. Y.; and Rotarex, Buffalo, N. Y.

## What the New York Non-Electrical Stores Do To Electrical Prices

A brief investigation on the morning of January 15, 1926, showed that the New York stores listed below were offering the following low prices on merchandise for which the electrical dealer is expected to obtain list prices:

	Approximate List	Offered at
<b>R. H. Macy &amp; Company—</b>		
Universal 3-plate range	\$130.00	\$110.00
Universal 3-heat Grill	15.00	10.89
<b>Liggett's Drug Stores—</b>		
Holdheet 8-cup Percolator	3.95	2.98
<b>Wanamaker's—</b>		
Manning-Bowman 8-cup Percolator	13.50	7.75
Manning-Bowman Meteor Heat Pad	7.00	5.25
<b>Sterns—</b>		
Universal 2-plate Stove	30.50	26.00
<b>Gordon Hardware Company—</b>		
Westinghouse Junior Heater	6.50	3.98
<b>Jones Hardware Corporation—</b>		
Ruttenber Grill, 3-in-1	12.50	10.80

ing this organization. They cut electrical goods right and left, using them as leaders to attract the public to their stores. Few of them have any conception of proper servicing. None of them have any real ideal of cooperation with the electrical industry to build up good will for electrical merchandise. Such legislation will prevent their price-slashing tactics. Naturally they are against it. In fact the only member of the committee signing a minority report disapproving such legislation was A. Lincoln Filene, head of the Boston department store of that name.

Pursuing this policy the National Retail Dry Goods Association has broadcasted a pamphlet containing a great deal of fallacious reasoning on the subject. There may be a few imperfections in the present set-up of the proposed legislation, but these can be worked out. On the other hand the advantages of price maintenance legislation such as proposed are many. They have a sound basis in economics and as such they are presented here.

### 1. It Does Not Mean Governmental Control of Business.

Permitting a manufacturer to assure himself of the success of his investment and initiative in developing a trade name and the good will for it cannot be construed as Government control of business. The fact that a policeman patrols a business block to prevent burglaries does not mean that the police force controls business. When a merchant slashes prices on some nationally-known article to bring customers into his store to buy other things he is burglarizing the good will attached to that article.

### 2. Such a Law Is Economically Possible.

The majority report of the Chamber of Commerce com-

# Be Legally Outlawed?

The collage features several advertisements:
 

- Hotpoint Electric Iron:** An advertisement for a Hotpoint electric iron, showing the product and its features.
- Light Bulbs:** An advertisement for various types of light bulbs, including incandescent and fluorescent bulbs.
- Baby Foot:** An advertisement for a product called 'Baby Foot', which is a foot powder or cream.
- Liniments and Salves:** An advertisement for various liniments and salves, including 'Liniment' and 'Salve'.
- 5-Lb. Pail Honey:** An advertisement for a 5-lb. pail of honey.

stores use electrical goods at slashed prices to attract customers. could have been shown, all culled from a single day's issue of clipped respectively from advertising of the following stores: Co., Kansas City, Mo.; Liggetts (Chain Drug Stores)

mittee favoring such a law is signed by noted economists such as Paul Cherrington, of Harvard University, and by experienced business executives, such as the president of the Packard Motor Car Company. This is evidence in itself that legislation like this is economically sound. The National Retail Dry Goods Association pamphlet stresses fluctuations in raw material and labor prices as preventing the fixation of a resale price. But the cost of raw material and labor figures only to a minor extent in the retail prices of highly-finished products, such as electrical appliances, so that this contention means nothing. After figuring in factory overhead, selling expense, transportation charges, retailer's overhead and profit, a 5 percent change in the cost of raw material would affect the ultimate sales price little.

### 3. It Will Help Retailers.

Such legislation would put the predatory price-cutter out of business or make a fair competitor out of him. It would give the manufacturer of nationally-advertised goods a means of protecting his legitimate dealers by cutting off the murder-price merchant from a supply of his goods. The National Retail Dry Goods Association seems to fear that the manufacturer after establishing a demand would cut the margin to the dealer and make it hard for him to operate. That situation would take care of itself. The manufacturer who hurts his dealers hurts himself and dealers can promptly stop handling goods on which there is no profit. The proposed legislation would also provide the dealer with the right to return his goods to the manufacturer at their cost price if he were discontinuing the line, going out of business or if the goods were deteriorated or damaged. If the manufacturer did not accept the goods back, the re-

tailer then would be allowed to sell them at whatever price he wished to.

### 4. It Is in the Public Interest.

Even price-cutters must make their profit somewhere. If they lose on well-known brands they must charge the public disproportionately high prices on unidentified and probably inferior brands. In this way the public gets a few high-quality articles cheaply and many inferior articles at high prices. Or, if the price-cutter does not take a high profit on something, he fails in business, costing the community and, in the end, the country, a large sum of money. Thus the public gets a small direct saving and sustains a large ultimate loss. The electrical industry is fortunate in having a real example of how control of resale prices has the effect of lowering costs to the consumer and at the same time boosting quality. The General Electric Company controls the resale price of lamps through its agency system; and, while general commodity prices have soared, the cost of lamps has come down and is lower now than ever before.

### 5. It Would Have No Direct Influence on Prices.

So long as the law of supply and demand operates—and no act of Congress can repeal that—a seller cannot set a price that is too high and still make sales. The department store association cries that price maintenance legislation would allow the manufacturer to set an exorbitant retail price. But that would be possible only through a monopoly, something the Government prevents even now. Just let a manufacturer try to gouge the public and his competitors will step in to take the market from him with reasonable prices so fast that he will learn a costly lesson.

## How Price Maintenance Legislation Will Help Electrical Merchants

1. It will prevent the central stations from cutting lamp prices.
2. It will put the predatory price-cutters out of business so far as nationally-advertised electrical material is concerned.
3. It will promote stabilization of the appliance selling field. Dealers will be enabled to sell quality, not price, and profits will be proportionately greater.
4. It will induce more and more national advertising by manufacturers, thus creating more and more public demand for high-quality goods.
5. It will educate the public away from the idea that quality goods can be bought at absurdly low prices.
6. It should do away with courtesy discounts.

# General Electric's Position in the Industry

*The spirit of distrust of large business organizations, which brought about "trust-busting" legislation a number of years ago, is still evident in the attitude of a portion of the public toward the General Electric Company. This company, by far the largest organization in the electrical industry, has in the last few years repeatedly been accused of fostering a monopoly and there has been an undercurrent of complaint within the industry itself to the effect that General Electric interests were squeezing other factors in the field between the millstones of control both of central stations and manufacturing facilities. The extent of this feeling has been recognized by the company and at the last directors' meeting there was presented a paper, prepared by Owen D. Young, chairman of the board, and Gerard Swope, president, dealing with the facts in the case. The paper, addressed to all stockholders, is presented here with the thought that, explaining fully and for the first time, as it does, the position and policy of this great commercial organization, it is of value and interest to every person in the industry.—The Editor.*

ON February 9, 1925, the Senate adopted Resolution No. 329, 68th Congress, 2nd Session, directing the Federal Trade Commission to investigate and report to the Senate to what extent the General Electric Company monopolizes or controls the production, generation or transmission of electric energy or power, whether produced by steam, gas or water power, and the manner in which such monopoly has been acquired and maintained, or in which such control is exercised in restraint of trade or commerce and in violation of law.

Since that time, in accordance with the resolution, the Federal Trade Commission has been making an investigation, and the General Electric Company is replying in full to all its inquiries.

We wish the stockholders of the company to know the salient facts.

## 1.—Alabama Power Company

In the debate in the Senate on Muscle Shoals, it was stated that the General Electric Company controls the Alabama Power Company.

The General Electric Company does not own any of the stock or other securities of the Alabama Power Company. The only interest of the General Electric Company in the securities of the Alabama Power Company was the owner-

ship by the G. E. Employees Securities Corporation (a company maintained for and largely managed by the employees of the General Electric Company, 30,000 of whom have purchased the bonds of that corporation) and by the Electrical Securities Corporation, of 2.9 percent of the bonds of the Alabama Traction, Light and Power Company, Limited, which bonds have since been exchanged for an equal amount but smaller proportion of the bonds of the Southeastern Power and Light Company, the company which now owns all of the common stock of the Alabama Power Company.

## 2.—Water Power

It was stated in the Senate that the General Electric Company controls the water power of the country.

The General Electric Company does not own any water power, nor has it stock control of any company owning water power, nor any stock interest in any company to which a federal permit or license for the development of water power has been issued. No director of the General Electric Company is a director of any company holding such permit or license. The General Electric Company does control some companies which hold voting stock in companies having permits or licenses, but such stock holdings do not, in any case, exceed fifty-one one-hundredths of one percent of the voting stock.

## 3.—Light and Power Business

It was stated that the General Electric Company controls the light and power business.

The General Electric Company does not either directly or indirectly, own the control of any light and power company. On December 31, 1924, it owned a substantial minority interest in the Adirondack Power and Light Corporation, which is interconnected with its Schenectady plant. It also owned a substantial minority interest in the Frontier Corporation which is interested in the St. Lawrence River development. In other light and power companies, including preferred stocks having voting

power, the General Electric Company then owned, directly or indirectly, in one company 17.8 percent of the voting power, in another 5.67 percent, in two others between 2 percent and 3 percent each, in four others between one percent and 2 percent each, while in any other companies in which it had a stock interest it was less than 1 percent in each.

On December 31, 1924, the General Electric Company owned approximately \$8,300,000 of securities of electric light and power companies. The G. E. employees Securities Corporation held approximately \$10,600,000 of such securities.

The only other substantial holdings of light and power company securities were those of the Electrical Securities Corporation and the United Electric Securities Company. The statements of these two companies show that they held light and power company bonds of a value of about \$11,800,000, and preferred and common stocks of a value of about \$2,100,000. Both companies had outstanding in the hands of the public on December 31, 1924, bonds and preferred stock of a value of \$11,552,000. The common stock is owned directly or indirectly by General Electric Company.

The total holdings of the General Electric Company, directly and indirectly, in the issues of electric light and power securities of the country are approximately one-half of one percent of the total issues of such securities.

## 4.—Electric Bond and Share Company

It was stated that the General Electric Company still controls the Electric Bond and Share Company.

On December 30, 1924, the General Electric Company authorized the distribution of all its interests in the Electric Bond and Share Company. This distribution was made to 27,086 stockholders. The General Electric Company has no representation on the Board of the Electric Bond and Share Company, and there are no directors common to the two companies.

## 5.—General Electric and Westinghouse

It was stated that the General Electric

*Continued on Page 35*

# A Business Guide for the Small Contractor-Dealer

## Final Installment—Merchandising and Finance

**M**ERCHANDISE, likewise, is a very important part of the investment of a business, and, similarly, a great factor in realizing net profit. As such, this investment should show a proper turnover in order to contribute its part to net profit. What has been said of Accounts Receivable and Receivable Investment might also very properly be repeated as regards Merchandise Investment. In fact, in the chart shown under Receivables, the factor of Merchandise Investment in turnover and net profit speaks up for itself and tells its own story.

We might suggest the following points, as means to safeguard this part of the business, and do as far as possible what is necessary to make it function to the ultimate good of the business—net profit:—

### (a) Proper Purchasing

Buy what you can sell readily at a proper rate of turnover, or for which there are good prospects of sale, and in proper quantities. Buy according to the class of trade you reach, considering its needs and desires. Buy according to the needs of your jobs, with ideas of efficiency, economy and profit. Have standard fast-moving and ready-for-job stock when you need it, so that time and money be not lost. Your sources of supply can care for your needs in special, odd or slow-moving merchandise, if you will only reasonably anticipate your wants. Do not be deceived or misled by high discounts or imaginary gross profit, where there may be no profit at all but rather a loss, if you cannot or do not sell the article or have to carry it a long time.

In this same connection, you might consider the purchase of a carload of conduit advisable because of the price saving over smaller quantities. If you can use and turn that quantity very quickly through immediate or reasonably so requirements, well and good; but if a car represented your requirements for six months or a year, you might easily lose your seeming price saving, and cases could happen where

**W**ITH this installment is concluded the business guide, compiled by a group of Los Angeles jobbers and presented by them to the recent convention of the Southern Division of the California Electricists at Lebec. The series has discussed the basic principles of the contractor-dealer business and in this final article considers merchandising problems, credits, records, insurance, banking relations and relations with jobbers. The principles advocated here are not new but it follows from that that they must have been tried and found workable. Comment on the suggestions put forward by the jobbers will be welcomed from readers of THE ELECTRICIST.

—The Editor.

the carload price would be more expensive than smaller quantities. This is a fair example well worthy of thought and consideration; other items, running into money because of their quantity, could similarly be taken. The best business men of the country have learned the real lesson and value of turnover. All business has certain fundamentals in common; one of these outstanding fundamentals is turnover. Do not neglect, disregard or lose sight of it—for the success and profit of your business.

### (b) Display and Appearance

Show your merchandise well and to the best advantage; make your store, whether large or small, attractive, clean, well arranged. You, yourself, in making purchases outside of your business, know what the reaction is. Goods, well displayed, with store properly arranged, are far on the way to sale. Courtesy, attention, service, of course, go right along with it.

### (c) Stock-keeping

Know the stock of merchandise you have, keep proper records of it, have it in its proper place; in short, employ a system of stock-keeping and handle

your merchandise—stock in trade—under it.

### (d) Movement of Stock

Merchandise contributes nothing to the business and to net profit until sold, and then, when moved at a proper rate of gross profit and at a proper rate of turnover. On the contrary, the result may be a loss, if not sold at all, or not sold within a proper time.

### (e) Old, Obsolete or Overstock

The foregoing suggestions may go a long way towards eliminating or at least minimizing this class of merchandise, but experience shows that such stock, for various reasons, and in spite of precaution, will accumulate. When this happens, do not throw such material into the junk or discard pile, nor leave it at rest in bins or on your shelves, but consider carefully means to dispose of it at the best market and as quickly as possible. If already depreciated or facing depreciation, what you thus realize is really net profit, and as such, this part of your selling job should receive the best judgment you can bring and plans you can devise.

### (f) Physical Inventory

Your Accounting System should provide for an actual, physical inventory at a stated time or times, but, in any event, at least once a year, preferably at the end of the year. This inventory is vital for any number of evident reasons. Many of these we have already mentioned. We will, therefore, merely make the brief statement its own emphasis.

### Payment of Obligations

The greatest factor in creating and afterwards in maintaining credit standing is the method of payment of obligations. As means to create and maintain this great asset of your business, we might present these:

- (a) Strictly observe at all times the terms of sale and payment under which credit was extended.
- (b) Pay all obligations when due on a net basis, or preferably pay

within the cash discount period, with its corresponding advantage—profit.

- (c) Maintain a proper proportion of assets and liabilities, particularly Cash and Receivables against your Payables, to enable you consistently and conveniently to discharge all your obligations as they mature.

(d) *Cash Discount*

One of the greatest, if not the greatest single factor, contributing directly to net profit, is the medium of Cash Discount on all purchases which carry it. Cash Discount is a premium given for payment of account before its actual net or term due date, and is in no way a part of the purchase price of goods. When not earned, therefore, by pre-payment, it should not, of course, be taken or claimed, but no business should fail to earn it by complying with whatever the Cash Discount terms may be. For the actual money invested in purchases or purchase obligations, and on which Cash Discount is figured, nothing yields as high a money return as Cash Discount. A concrete example may, perhaps, more forcibly illustrate this truth.

Let the amount of your purchase obligations = your invested capital.

Let the payment (monthly, as an example) = turnover.

Let the rate and amount of cash discount = profit.

The following tabulation is prepared on the basis of discounting bills once a month, merely in order to simplify the illustration and serve more conveniently as an example. We must, however, remember that basically and rightly cash discount should depend upon payments more frequently than once a month—this by reason of the very nature of cash discount and for a proper proportion between a discount date and the net due date of bills. With this clearly in mind, you will see that, while the example shows only a monthly basis, in practice and actually, with several turnovers in a month (payments with cash discount), the profit yield (through cash discount) is very much higher than indicated by the example. Ten day cash discount means three times a month or thirty-six times a year; fifteen day cash discount twice a month or twenty-four times a year. The example shows only *twelve* times a year.

Amount Invested Capital; Purchase Obligations	Rate of Profit (Cash Discount)	Monthly Profit	Annual Profit	Annual Rate Return Invested Capital
\$ 1,000	1%	\$ 10	\$ 120	12%
1,000	2	20	240	24
1,000	5	50	600	60
2,000	3 (av'ge)	60	720	36
10,000	3 (av'ge)	300	3,600	36

If purchases should run still higher per month, you can see where this road leads. Is Cash Discount worth while and does it really mean something of value and importance? Under a banking connection, you can borrow money at a rate of around 7% *per year*, and taking the same example, the figures would run as follows:

Loan	Profit (a) (Cash Discount)	Cost of Loan (b)	Net Profit
\$ 1,000	\$ 120	\$ 70	\$ 50
1,000	240	70	170
1,000	600	70	530
2,000	720	140	580
10,000	3,600	700	2,900

(a) Cash Discount profit figured on an annual basis.

(b) Cost of Loan also on annual basis—7% money.

Where purchases are larger, carry out the same proportion. Where no bank loan is necessary to take Cash Discount, the saving is *all* net profit. This is no selfish picture, drawn by Jobbers or their Credit Men, but just a plain, unvarnished truth that should strike home to every real business man. Does Cash Discount pay and is it worth while? Answer the question for yourself.

This profit, however, is not all that Cash Discount yields. It is also a great builder of credit and standing—in your class of business among your associates, with your Jobber, with your bank, and this manifold benefit favorably reacts directly on you and your business.

#### Records

Every business must have proper tools and equipment with which to perform its various functions, and generally carry on. Records are one of the principal tools of any business.

- (a) Generally, records of various character should be carefully and systematically kept, according to the needs and nature of the business. Principal of these are charge tickets, ledgers and book-keeping records, shipping and receiving records, orders, contracts, etc. Your Accounting

System will advise for the most part how and where such records should be kept.

#### (b) *Filing System*

- (b-1) Correspondence, "live" papers, etc., should be simply but carefully filed under a convenient plan, which an Accountant can advise, or your Jobber will be glad to set up for you. The "Hunt" system has always been found inconvenient, inefficient, uneconomical, very often expensive, and sometimes worse than nothing at all. There should be a place for everything and everything in its place, where you can lay your finger on it at once, when needed.

- (b-2) You should also make proper arrangement for the sending regularly to file and the keeping of "dead" papers which at some time or other you might need to consult.

- (b-3) Cash, stocks, bonds, negotiable or other valuable papers and records—a vital part of a going business—should be stored in a safe or vault outside of business hours and during business hours properly safeguarded as well. In addition to theft, burglary or dishonesty, there is the other, but too common hazard of fire.

- (b-4) If your business justifies, you might well maintain a separate, permanent file for credit information on customers, either present or prospective.

- (b-5) A separate file for the operation of your Collection System might also prove advisable.

- (b-6) Remember, that none of these filing records need be complex or cumbersome, but what is wanted is a simple, systematic method, adapted to your business and its requirements, which will give you what you want when you need it, with certainty and without loss of time.

#### Insurance

No safeguarding provision for a business is so vital in importance, but unfortunately, so often neglected or disregarded as Insurance.

#### (a) *Business Insurance*

This is insurance against death, illness or disability, or all three, as re-

gards principals, partners, officers or valuable employees for the benefit of the business.

While not so essential, perhaps, as some other forms of insurance, still this classification has a great part in business, and, in some cases, is absolutely essential to the continued success of a business, dependent to a substantial extent on one or both of the partners or principals. The death or complete disability of such a partner or principal has brought to an untimely end enterprises, highly successful and well on the way to greater achievements. Where advisable, this form of insurance warrants most careful consideration. Where necessary, it should be taken, with premiums paid by the business, and benefits payable to the business. Your banker or Jobber can well advise you in particular cases of this nature.

#### (b) Employers' Liability Insurance

Most requirements of this nature are now pretty well established by state law. The important thing to do is to follow the law and, when necessary, seek good legal advice. Where not determined by statute, this form of insurance may well be considered to protect the business, and of course, where defined by law, should be placed accordingly.

#### (c) Automobile Insurance

The modern use of automotive transportation, both for business and pleasure, brings hazards, which should invite corresponding precaution. Most of us are familiar with the general features of automobile insurance, but too many do not know its bearing on a business. Fire, theft, and pilferage automobile insurance might well be carried as a measure of sound protection, just as you would provide against other hazards of a business. *Property Damage* and, above all, *Liability Automobile Insurance* are something that no business should fail to have. A serious property damage accident could easily impair the resources of an ordinary business, and a serious liability accident ruin it. We might well offer the same advice to partners or principals in a business with reference to personal automobiles, whether used in connection with business or not, where the consequences of an accident might reach to the business itself as a part of their worth and resources.

#### (d) Fire Insurance

Anyone could well devote a volume

to this feature of insurance, for, in the face of authentic statistics, brought to our view almost every day, fire takes every year from business, society and national wealth a stupendous toll. Specific figures would only still more astound us. A business without fire insurance at all and even with inadequate fire insurance is unsound in the very beginning, unsafe and questionable from other angles, when so vital a protection and safeguard is overlooked or neglected. Fire disaster can easily wipe out your business and your resources with it, with consequent loss to yourself, to society, to your clients and to your creditors. A concern without fire insurance, or insufficiently insured, is an unsafe credit risk, as well as an unsound business risk generally. More need not be said here.

#### Banking Relations

One of the really great aids to the success of a developing business is a proper banking connection. To appreciate this statement, we must properly understand the purpose of a bank—what it is in business for. Its purpose or function is to loan money—money is its merchandise and stock in trade, except that the transactions are in the nature of loans, instead of sales. The profit or compensation is the interest or carrying charge. While the bank, especially in modern business, renders or performs many kinds of service, its real business is the sale of money (in loans), if that term could be used. The bank loans its funds or merchandise either to an individual or to a business. If it did not so function, if its funds all remained on hand, if it made no sales in the form of loans, just as any concern would have to do, it would quickly go out of business.

Your banker can and wants to be a real friend to you, just as does your Jobber, because you are the customer in the market to buy what the bank or Jobber has to sell. There is and should be a mutual interest of buyer and seller, customer and house. To be such, and for this relationship to be properly and soundly established, the banker must have real facts on which to base his decision or advice. Your Accounting System will give you the method to establish this relationship or connection in the form of figures, statement and financial condition of your business. You should have this information available for your bank, your Jobber, or those

from whom you seek credit. While a monthly statement is quite advisable, both for your own information as well as for these other purposes, you should have one prepared at least quarterly or semi-annually or at the worst annually.

Your banker, after you are his customer, and even before, when submitting your financial statement as a basis for credit, can tell the condition and trend of your business; a good business man will seek the banker's advice in time to apply any proper remedy and before the case may be too late for treatment. Every business should have a banking connection, whether bank credit is sought or not. The advantages of such an arrangement are self-evident; the time, too, may come when one may need the privileges of this connection and have them available for use.

The banking connection is invaluable, when, for peculiar reasons, collections may be slow or temporarily frozen, and the profits that *Cash Discount* yields are not to be lost. With the profit of "Cash Discount," as already described, well in mind, he would, indeed, be a poor business man, and one likely eventually to fail, who would not see the wisdom and advantage of borrowing from his bank at, say 7% per year, to secure the equivalent of 12%, 24%, or even 60% a year, which, as a result of a temporary bank loan, cash discount would give him.

*Checks.* By far the greatest percentage of modern business is handled through the medium of checks. This does not apply so much to the retail end of your business, although you will find that there, too, checks play quite a prominent part. You should pay practically all your obligations, of whatever character, by check. A checking arrangement furnishes its own clear receipt, supplies a great part of its own book-keeping and ties in well with the other parts of your Accounting System. A few observations might have place here:

- (a) Maintain a clear and accurate record of your bank balance. Reconcile your bank statement with your own records monthly, promptly as you receive it. Have your Cash (or equivalent) records—both for Receipts and Disbursements—clear, systematic and unquestionable.
- (b) Never knowingly issue a check that is not payable. If through error or some cause beyond your

control, the accident happens, correct at once and explain the circumstances to all interested parties. You owe this to yourself, your credit and to those who have confidence in you. Do not allow anyone to form a wrong opinion, based on a "bad" check transaction, even if promptly made good. Few things in business react so unfavorably as a "cold" check.

- (c) Your checks tell your banker a real story which should be favorable to you and your business through their amounts, their frequency, methods of paying obligations, cash discounts, with whom you do business.
- (d) Maintain proper sizeable balances to justify the banking function. Your business should be profitable to the bank, just as you would wish the patronage of one of your customers to be profitable to you. Proper bank balances and "bad" checks seldom, if ever, exist together in the same business, regardless of cause or reason.

Your banker can be a source of credit information, help and advice, as well as a valuable sales influence. Do not ignore or neglect what can be such a valuable ally in your business.

#### Relations With Jobber

Your Jobber is your convenient and economic source of supply and, as such, really indispensable to your business. This relationship, therefore, by its very nature, should be extremely close, pleasant, happy and mutually satisfactory and profitable. If it is anything else, one or the other party does not properly function in the relationship; in cases, even both may be out of step. In building this relationship on a right foundation, the following suggestions might not be amiss:

- (a) Do not enter into business without Character, Capacity and sufficient actual Capital, or arrangements for it, to enable you to do the business you anticipate. An improperly financed business is handicapped from the very start, with correspondingly greater chances for failure. A properly financed business starts, at least, from scratch; and, with the foresight that proper financing dis-

plays, has reasonable chances for success. No one, so starting, need fear competition hazards in the fair, square game of business. Your Jobber can and will gladly advise you on the question of capital, when you consider entering into business, and, later, can valuably aid when the question of increasing capital or refinancing your business presents itself.

- (b) Credit is never intended to supply the lack of capital, but is an auxiliary asset in your business and a convenient form or method to furnish merchandise for the efficient and economical conduct of your business. Credit is Confidence and something to be based on the other assets of your business, not something to supply their lack. These other assets are Character, Capacity and Capital, and out of them credit must be created, and on them, as a foundation, it must rest.
- (c) Have a clear, mutually satisfactory credit arrangement with your Jobbers; religiously handle your relations and obligations accordingly. When special help is required, tell your Jobber your story without delay, rearrange matters on a special, but nevertheless definite basis, to tide you over the period of justified extension. As soon as possible, go back to the regular basis; permanent financing should come from within not from without the business. Everyone should want to be independent and in the strictest sense own his own business and control his own actions. For real business freedom, you should avoid all forms or even semblance of financial bondage.

What your Purchase Policy with reference to a Jobber or Jobbers should be is your own free choice and decision, which, of course, you should make after deliberate, intelligent judgment. Were I an Electrical Contractor-Dealer, I would set for myself these few simple rules to guide me:

- (a) I would buy from Jobbers, who, I was convinced, had a well-defined and scrupulously followed policy for the constructive devel-

opment of my business. Then service, quality, and willingness and ability to help me in all my problems would be a strong influence. Price would be a last or minor consideration, realizing that business must be competitive and based on a fair and reasonable market. Seeming price savings or differences could easily be offset by or absorbed in many other accruing advantages.

- (b) I would remember that the Jobber's interest is one with mine, that he profits only as I remain in business, make money and am successful. I would want to earn and prove worthy of his friendship and feel that he would earn and prove worthy of mine.
- (c) I would make it a fixed rule to buy from a few sources of supply, who could and would be anxious to serve me faithfully and well to the extent of all my requirements. In so doing, I would be showing a loyalty in the business I have to place, make my business profitable to my Jobber, and the Jobber would show a spirit of gratitude and make the connection profitable to me. When I might need help and rightfully entitled to it, I would know I would receive it, but, should I play the field, locally and abroad, and thereby not create any special ties of loyalty and gratitude, if and when trouble comes, and help is needed and asked, there would be no real obligation on the part of anyone to help me. I would not have built a right foundation nor properly have helped myself. I would bring myself to recognize the truth, borne out by experience, that far more failures may be traced to a condition of many and promiscuous creditors than to one of a very few—that friends will pretty surely see a friend through, but mere acquaintances or strangers can hardly be expected to recognize any obligation.
- (d) I would give my Jobber or Jobbers my cash business when, for necessary reasons, credit might be exhausted or temporarily suspended, thus making what return

I could for benefits already received, and maintaining contacts of friendship and advice which would help greatly to restore me to my former condition.

- (e) I would maintain my credit and credit standing with my Jobber or Jobbers at the highest degree at all times, realizing that credit is the greatest asset of my business, and could stand me in good stead, when all other assets might fail.
- (f) I would look upon my Jobbers as invaluable sources of credit

information and advice in my business, as well as general counsel at all times. I would feel that, having available the help of this larger, broader experience, with the keystone factor of mutual interest, ignorance, disregard or lack of appreciation of such powerful aids might well explain the heavy mortality and turnover in my class of business, and that I should try, as far as I was concerned, to lower that rate and better that deplorable condition.

## General Electric's Position

*Continued from Page 30*

Company and the Westinghouse Electric and Manufacturing Company are controlled by the same interests.

The General Electric Company does not, either directly or indirectly, hold any securities of the Westinghouse Electric and Manufacturing Company. Our list of stockholders has been examined and shows no holdings of our stocks by the Westinghouse Electric and Manufacturing Company. There are no directors or officers common to the two companies. We know of no financial interest having holdings of any consequence from the standpoint of control of both companies.

### 6.—General Electric and Western Electric

It was stated that the General Electric Company and the Western Electric Company, Inc., are controlled by the same interests.

The Western Electric Company, Inc., is a manufacturer of telephone apparatus and over 98 percent of its voting stock is owned by the American Telephone and Telegraph Company, as shown by its report published on March 5, 1925. The General Electric Company has no financial or other interest in either company or in the telephone field. An examination of the list of our stockholders shows no holdings of our stocks by the American Telephone and Telegraph Company or the Western Electric Company, Inc. Of the twenty directors of the General Electric Company and of the nineteen of the Telephone Company at December 31, 1924, three are common; they are not officers of either company.

The Western Electric Company, Inc.,

maintains a number of electrical jobbing houses throughout the country, from which they sell electrical supplies made by various manufacturers, the General Electric among them.

### 7.—General Electric's Position as a Manufacturer

It was stated that the General Electric Company is a great monopolistic interest, a gigantic trust controlling everything in the electrical world and the manufacture of all electrical devices and supplies, small and large.

The General Electric Company is the largest manufacturer in the electrical industry. The output of manufactured products of the General Electric Company for 1923 was approximately \$271,310,000, and the number of wage earners employed was 58,762—1923 is taken for the comparison because the figures for that year are the latest census figures. In accordance with the census, these are respectively 21 percent of the total output of electrical manufacturers and 25 percent of the wage earners employed in the electrical manufacturing industry in the United States.

In accordance with figures of the American Bureau of Metal Statistics, the General Electric Company, in the five years 1920-1924 inclusive, used an average of 20 percent—not more than 22.2 percent in any one year—of the copper used in the electrical manufacturing industry.

The *Electrical World* published under date of September 20, 1924, a chart showing the capitalization of electrical manufacturing companies, and in accordance therewith the General Electric

Company's capitalization was 22 percent of the total.

An index of General Electric selling prices is shown by charts and for comparison the charts also show the curve of commodity prices, compiled by the United States Bureau of Labor Statistics. Taking prices in 1914 as 100 percent, it is shown that in 1920 commodity prices rose to 231 percent, while General Electric prices rose to 155 percent. During the first six months of 1925 the commodity prices were 161 percent, General Electric prices were 113 percent and General Electric lamp prices were 62 percent of the prices in 1914.

### 8.—General Electric and J. P. Morgan and Company

It was stated that the General Electric Company is controlled by J. P. Morgan and Company.

On January 15, 1925, there were 1,802,870 shares of the common and voting stock of the General Electric Company held by 27,086 stockholders, an average of 67 shares each. There was only one stockholder owning as much as or more than 1 percent of the voting stock of the company, and that was the G. E. Employees Securities Corporation. Slightly over 1 percent of the voting stock stood in the names of J. P. Morgan and Company or its nominees, and we are advised by them that all of that stock was held for numerous clients. Two of the twenty directors of the General Electric Company were members of the firm of J. P. Morgan and Company.

### 9.—Decree of Federal Court

It was stated that the General Electric Company, in the conduct of its lamp business, violated a decree of the Federal Court, entered in 1911.

This matter has been thoroughly investigated by our counsel and we are advised by them that there has been no violation of that decree, but, on the contrary, a complete compliance with not only its letter but also its spirit.

In 1924 the Government brought another suit against the General Electric Company with reference to its lamp business, and the decision of the Federal Court in Cleveland was in favor of the General Electric Company. A copy of that decision was sent to all stockholders under date of April 9, 1925.

OWEN D. YOUNG, *Chmn., Bd. Directors.*  
GERARD SWOPE, *President.*

# *The Electragist*

Official Journal of the  
Association of Electragists—International

S. B. WILLIAMS  
Editor

H. H. STINSON  
Associate Editor

## The Cost of Wiring Materials

THE effort being made by central stations and certain others at this time to secure for the installation of unarmored assemblies National Code regulations similar to those for armored assemblies are fostered by a belief that the use of such materials will so reduce the cost of house wiring as to greatly stimulate the market therefor.

We have opposed such rules on the ground that they would break down fundamental Code standards, that such an action would be a step backward and that it would increase the electrical fire hazard.

From the very beginning the Code recognized all insulated conductors as bare conductors only, except when contained in a metal armor. Those who have been responsible for the Code revisions have not considered the armor as an insulation but they have recognized it as the only kind of protection that will insure grouped insulated conductors retaining their original insulation.

Conductors unprotected by armor have had to be separated and fastened on knobs a distance from the surface wired over. Why? Because the fundamental principle of wiring as expressed in the first National Electrical Code, and continuing down to this day, is that unarmored insulated conductors for safety must be considered as bare. When fished, knob and tube work has to use a loom raceway but each conductor has to be separated from the other because the Code makers were not willing to recognize loom as sufficient protection to grouped conductors against mechanical injury.

Now the proponents of unarmored assemblies would have us throw to the four winds all of the fundamental principles which have made electric wiring so safe in this country and admit a wiring practice similar to that used in the countries of Europe which have a very small domestic usage of electricity, urged by the thought that it is cheaper.

Across the water, in some countries, a twisted pair is commonly used for house wiring. Unarmored assemblies may have parallel conductors but in principle they are the same as a twisted pair, offering if anything less difficulty to the amateur with a hammer and some nails.

The fire losses in this country from electrical causes have been kept low simply because our standards of wiring have

been developed for that purpose. If we now disregard those standards we will have to answer to the public later for maintaining a fire hazard. Are we going to sell our birth-right for this mess of pottage?

But will it materially lessen the cost of wiring? A house wiring job has a service. Will this be any cheaper? It has outlet boxes. Will they cost any less for materials and labor to set them? It has switches and convenience outlets. Will they cost any less for materials and labor?

Where then is the saving, if any? Merely in the cable. The cost of cable in a house wiring job averages less than 20 percent of the price the customer pays. Suppose the cable were 10 percent cheaper than armored cable, what would be the difference in the price to the customer? Two percent! If this cable is properly required to be strung on knobs the same as any other unarmored conductor then there will be no saving in cost.

Article V Committee has recommended this separation from the surface wired over. The central station interests have filed a minority report opposing this.

Do we believe in reducing the cost of wiring? We do, when it can be done without sacrifice of convenience and safety. We do not, however, favor cheaper wiring simply because it is cheaper.

To cheapen wiring does not mean that we are going to be able to serve more homes with electricity. Today 85 percent of the families that live where service is available have electric lights. Of the remaining 15 percent fully half are in dwellings that will never have anything but kerosene lamps. If the owners of these buildings were given the wiring materials for nothing, provided they paid for the labor, they would not install electric service. We refer to the very poor tenements and to houses in slum sections.

What then is all the hubbub about? Will cheaper wiring wire any more new houses when all new homes in districts with service are being wired any way?

This cry that cheaper wiring will make electricity available to so many more people has no foundation in economic fact.

What we need today is better wiring. Has the growth of the bath room in the American Home been due to talking cheaper plumbing or better plumbing?

Is it possible that the American people cannot afford better wiring when they can spend for a radio set more money than it costs to wire a house?

Do the central stations recommend the cheapest refrigerators and appliances, or do they have committees working on these things in order to find out what is the best?

If the central stations will only be big enough to look ahead they will see that the future lies in improving installation materials and methods, not in cheapening them.

To insist on good appliances and lighting fixtures and low grade wiring is like insisting on the best safety lock for the front door and letting the back door get along with a low grade lock.

### Electrical Committee Procedure

The Electrical Committee of the N. F. P. A. has had presented to it for consideration at its semi-annual meeting this month a set of rules of procedure. The Electrical Committee work has gone ahead without much attention being given to formal procedure but now that the committee is sponsor for the National Electrical Code in its status as an American Engineering Standard, deliberations and revisions can be carried out only in a very definite and known fashion.

The election of a chairman, appointment of article committees, determination of data to be discussed, its presentation and disposition must all be an orderly process. The confusion attendant upon certain of the work of the Electrical Committee in the recent past must not be permitted to again occur.

### Bus Feeders

Bare copper rods for risers in office buildings have been used before, but so far as we know the only time bare rods have been used for the entire feeder system of a building is in the new telephone building in lower New York City and described elsewhere in this issue.

Such a method of serving a building is advocated on the ground of economy. Not only is there a low material cost, but bare copper wire in air can carry a much higher current density than insulated cable. There is also a certain flexibility to the system in that a floor can be changed to a different feeder by simply changing a tap without disturbing a circuit.

On the other hand, there are many limitations. The bare rod system cannot be used in every building. In the first place the building must be designed with suitable riser shafts in the beginning if it is to be used. Also the current consumption must be large.

Should a contractor have a job where he might want to use this system he ought to make due allowance in his estimate for non-productive labor in laying out the system on

the job because of unfamiliarity. The ordinary job superintendent given a conduit job can lay out the bends and offsets without any trouble or engineering help. With the bare copper rods, however, it will be found, at least until the industry is more familiar with it, that there are numerous little things about it which will not be thought of when the job is figured.

The use of bare feeders is interesting but it is doubtful if this system will make any serious inroads into conduit work.

### The Local Electrical League

Too much emphasis cannot be placed upon the importance of the electrical league in local affairs. No matter to which branch of the electrical industry one belongs he is nevertheless an electrical man and his interests as such are touched by anything affecting the industry.

The electrical league offers a common meeting place for all branches of the industry. It is a harmonizer of purpose. Where there is a strong league that is properly functioning and not dominated by any one interest, there will be found the greatest coordination of effort and the greatest mutual respect of all branches of the industry.

Moreover, there is an increasing number of things which have to be presented to the industry as a whole. It requires a league to function in this respect. The Red Seal plan for instance cannot be operated in any locality except by an electrical league. A new ordinance receives most attention when it comes with the indorsement of the entire industry. National lighting campaigns require a league's support to go over properly locally.

A league is not a melting pot where the identity of each branch of the industry is lost. In fact each branch should maintain its identity through a local association or a section. There are problems to be discussed which do not particularly interest other members of the league and besides it is always well to have a unified branch thought to bring to the league as a whole when discussing any industry problem.

Electrical contractor-dealers should organize locally and belong to their league. A strong league makes better local conditions.

### Standard Symbols

Are architects and engineers using the Standard Symbols for wiring plans? If they are not it is probably because no one has brought them to their attention forcefully.

These symbols are approved by the American Engineering Standards Committee which means that they have been put to every test and have been unanimously approved by every interested national organization.

Contractors are urged to secure the cooperation of the architects and engineers they work with in the use of the symbols.

## Association of Electragists INTERNATIONAL

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\*Marshall L. Barnes .....1910-1912  
Ernest Freeman .....1912-1914  
\*Deceased

John R. Galloway .....1914-1916  
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Sacramento .....	L. W. Sherman	910 Ninth Street	Nassau-Suffolk (C) .....	Henry T. Hobby	55 Front Street, Rock- ville Centre, L. I.
San Francisco (C) .....	E. E. Browne	522 Call Building			
Beverly Hills (C) .....	H. Barker	Beverly Hills			
Santa Ana (C) .....	O. W. Robertson	303 N. Main St.			
<b>COLORADO</b> Colorado Springs (C)...	Matt Whitney	208 N. Tejon St.	New York City Section No. 1 (C) .....	M. J. Levy	70 East 45th Street
Denver (C) .....	E. A. Scott	615 Fifteenth Street	Independent (C) .....	Albert A. A. Tuna	127 East 34th Street
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<b>CONNECTICUT</b> Hartford (C) .....	A. A. Angello	473 Park Street	Niagara Falls (C) .....	E. M. King	515 Niagara Street
Waterbury (C) .....	D. B. Neth	107 West Main Street	Rochester (C) .....	Theo. T. Benz	278 State Street
<b>DIST. OF COLUMBIA</b> Washington (L) .....	R. W. McChesney	Munsey Building	Schenectady (C) .....	Richard Spengler	421 McClellan Street
<b>FLORIDA</b> Jacksonville (C) .....	W. H. Secrist	c/o Bay-Secrist Elec. Co.	Syracuse (C) .....	Fred P. Edinger	802 East Water St.
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<b>MINNESOTA</b> Duluth (L) .....	Morris Braden				

# JANUARY ACTIVITIES

## Year Promises Great Progress in Red Seal Plan

**BY** THE end of the current year Red Seal homes will be found in almost every portion of the country reached by central stations, judging by the rapidity with which local electrical leagues are going ahead with their plans to tie-in with the Red Seal campaign.

During January alone reports came to the Society for Electrical Development showing recent Red Seal progress in the following cities:

**Denver:** The local league in Denver has worked out its Red Seal plan, shown it to the S. E. D., and will have it in printed form very shortly.

**Youngstown:** The electrical league held a meeting on January 27 to explain the plan to local architects, addressed by Kenneth McIntyre of the S. E. D.

**Memphis:** The league held a meeting January 7, addressed by G. E. Jaquet of the S. E. D., officially launching the Red Seal Plan.

**Glens Falls, N. Y.:** The Northern New York Electrical League met on January 14. It was decided to build electrical homes in Glens Falls and Saratoga and use them to introduce the Red Seal idea.

**Amsterdam, N. Y.:** The electrical league on January 15 considered a plan to exhibit an electrical home to introduce the Red Seal campaign.

**Schenectady, N. Y.:** The league has approved a budget of \$2,800 for Red Seal work and is going ahead at once with an electrical home to present the idea.

**Albany, N. Y.:** The executive committee of the league will put a Red Seal plan of operation before the February meeting of the league.

**Northern Illinois:** The Electrical League of Northern Illinois, West Suburban section, will hold a meeting early in February to present the Red Seal plan to architects and builders.

**Pittsfield, Mass.:** A Red Seal committee has been appointed by the Pittsfield Electrical League.

**Kansas City, Mo.:** The Red Seal plan will go into active operation on March 1, the plans being in almost final shape now.

**Pittsburgh, Pa.:** The total of Red Seal homes already erected in Pittsburgh passed the 100 mark shortly after the first of the year.

**California:** The tentative plan for the administration of the California Electrical Bureau, having in charge the operation of the Red Seal plan in the entire state, has been submitted to members. It provides for the division of the state into 25 districts, each under



How California Has Been Districted for Red Seal Campaign

the jurisdiction of a district committee which will take charge of promotion, inspection of wiring plans for individual homes, inspection of completed jobs and award of the Red Seal emblem and certificate. Wherever an electric club or league is functioning it will be asked to appoint a committee within its membership. Where there is no such organization committees will be appointed by the State advisory board, to consist of one central station man, one electragist and one electrical dealer or electragist contractor-dealer. Monthly reports of progress are to be sent in to headquarters of the Bureau in San Francisco by

each district chairman, the reports giving the number of homes proposed, the number under way to which preliminary job signs have been granted, the number completed and a complete statement as to all appliances installed in homes, including lights and fixtures, and the cost of the wiring job and value of the appliances and fixtures.

## Plans for Greatest Florida Convention

The 1926 annual convention of the Florida Association of Electragists will be the largest and most important held by that organization, according to the plans announced by Charles E. "Jesse" James, secretary. It is to be held at Orlando, starting February 16 and continuing for three days. The tentative program includes talks of special interest, discussion of vital problems now current in the contractor-dealer field, and a schedule of entertainment and sport features that rivals those staged at the annual conventions of the international body.

On the morning of Tuesday, February 16, the state association will hold its first business meeting. The afternoon of the same day will be devoted to talks by nationally prominent speakers and that night there will be a dance. On Wednesday morning there will be a manufacturers' exhibit to be followed in the afternoon by addresses from the representatives of the manufacturers, telling what is being brought out in the way of new products and what are the plans of the manufacturers for 1926. Wednesday evening will see the presentation of two short plays by members of the industry.

Thursday will be spent on the golf links, a tournament having been arranged for all delegates and visitors. That evening the Glad Hand Committee of the A. E. I., famous for its work at West Baden, will take charge of things and put on the same show they presented at the international convention. On the same evening the association banquet will be held and a dance will also be given.

## Better Inspection Asked in Salt Lake City

Considerable discussion was held relative to the proper enforcement of the electrical ordinances, including that for inspection, at the meeting of the Salt Lake City Electrical Development Association, held January 7. The association went on record as being willing to cooperate with the Rocky Mountain Cooperative League to the extent of hiring an attorney to force the observance of the inspection law. It was stated that the association had tried for many months past to have the city attorney enforce the law, but without results.

Officers of the association for 1926 were elected at the meeting as follows: President, George A. Hinley; vice president, G. E. Tripp; secretary-treasurer, Edward M. Gabbott. The executive committee consists of D. P. Robbins, George A. Hinley, G. E. Tripp, H. R. Bucks, E. H. Meine.

## Underwriters Circularize Wiring Customers

A circular letter, designed to bring about more uniform construction and the general reporting for inspection of all electrical installations, is being distributed through contractors to the public by the New York Board of Fire Underwriters. This action was taken on the suggestion of the Nassau-Suffolk (N. Y.) Association of Electrical Contractors, who stated that many of their customers were not fully informed regarding the requirements of the electrical permit made a part of fire insurance contracts. In consequence of this, the association stated, it was difficult to figure against contractors who do not follow the Code nor report their installations for inspection unless required to do so by the owner. The circular letter below on the Underwriters' stationery is being distributed by the members of the association to their customers:

"Electrical wiring and appliances if installed by careless or incompetent workmen may become a hazard to both life and property. To safeguard human life and the interests of property owners the New York Board of Fire Underwriters has maintained for many years an Electrical Inspection Department through the collection of a moderate inspection fee and without profit to assure the installation of electrical

wiring and appliances in accordance with nationally accepted standards.

"It is important that all property owners should require of contractors a certificate from the New York Board of Fire Underwriters that electrical equipments, changes, additions and alterations are approved as is specifically required in fire insurance contracts issued in the City of New York and suburbs.

"Contractors installing electric wiring in any premises, where insurance is carried either on building or contents, should file an application for inspection of the equipment being installed, and in all cases furnish to the owner a certificate of approval from the New York Board of Fire Underwriters."

## Officers for Salina Association

The executive personnel of the Salina (Kan.) Association of Electrical Contractors and Dealers for the coming year were selected at a meeting held in the early part of January. The officers are: C. G. Loomis, president; Harry

Hagler, treasurer; Warren Hull, secretary.

## Cleveland Boosts Convenience Outlets

The plan of the Cleveland Electrical League to put on a special campaign each month during 1926 on some particular electrical device was inaugurated January 1 by an intensive drive boosting the use of convenience outlets. Forty-four contractor-dealers entered into the cooperative plan. The slogan for the month was "Install Convenience Outlets—Places to connect portable lamps and electrical appliances."

Advertising matter and window banners bearing convenience outlet propaganda were prepared and distributed to the contractor-dealers who entered into the cooperative campaign. The project was also explained to a meeting of jobbers' salesmen and was received enthusiastically.

In addition to the display matter given the dealers the league distributed 44,000 door hangers.

## Electrical Committee Has Full Program

A NUMBER of important topics including rules of procedure, report of Article V Committee on unarmored assemblies and power installation rules, are scheduled to come up for consideration at the annual meeting of the Electrical Committee N. F. P. A. to be held in New York on February 18 and 19. Topics for discussion by most of the article committees have been prepared but action will not necessarily be taken at this meeting.

Most of the items that will be brought to the attention of the several article committees refer to changes or definitions which will clarify certain rules now difficult to interpret.

Article V Committee has the most important calendar. It will have for consideration the preparation of rules governing the installation of non-metallic sheathed cables, underfloor duct systems, auto-transformer balancing coils and temporary wiring. It will also be asked to consider the use of more than four wires in metal molding, the use of rigid conduit in cinder fill and forbidding the use of porcelain shell weather-proof sockets where subject to mechanical injury.

The work of Article Committee VIII

(Automatic Protection of Circuits and Appliances) will also be watched with interest. Among the topics which it will be asked to consider are:

The use of thermal protective devices (cutouts or relays) for the wires in motor circuits as well as for the motor proper.

Provide motor wiring tables.

Study diversity factor for copper sizes, risers and feeders for both lighting and power load.

Study of proposed use of lamps to indicate blown plug fuses.

Study problem of plug fuse abuse.

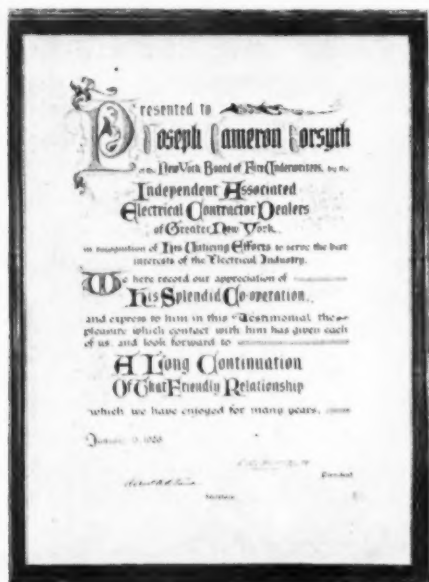
The grounding committee will be asked to consider a general revision of rules covering inter-grounding and character of artificial grounds.

The committee on rotating machinery and control apparatus will be asked to study equipment for over 2,500 volts, motors in extra hazardous places including grain elevators, ball bearings in motors, name plate markings, use of disconnecting plugs in place of switches on portable motors.

The heating appliance committee will have put before it a proposal to recognize so-called tinsel cord for small heating appliances.

## Forsyth Honored by New York Contractor-Dealers

Joseph C. Forsyth, whose appointment recently as supervising engineer of the New York Board of Fire Underwriters brought enthusiastic expressions of approval from the rest of the industry, was signally honored at the January meeting of the New York Independent



"In recognition of untiring efforts to serve the electrical industry"

ent Associated Electrical Contractor-Dealers. The honor took the form of an engraved testimonial, a photograph of which is shown here, reading:

"Presented to Joseph Cameron Forsyth, of the New York Board of Fire Underwriters, by the Independent Associated Electrical Contractor-Dealers of Greater New York in recognition of his untiring efforts to serve the best interests of the electrical industry. We here record our appreciation of his splendid co-operation and express to him in this testimonial the pleasure which contact with him has given each of us and look forward to a long continuation of that friendly relationship which we have enjoyed for many years."

## Eastern Inspectors to Meet in February

A meeting of the Eastern Association of Electrical Inspectors, an outgrowth of the Western New England Association of Electrical Inspectors, will be held in Hartford, Conn., on February 10. One of the important subjects slated to be discussed is "Grounding." In connection with this subject the meet-

ing will take up the question of the proper identification of circuits.

## Oldest Contractors' Body Elects Officers

The oldest electrical contractors' association in the United States, Electrical Contractors' Association No. 1, of New York City, met on January 7 and elected officers to serve in 1926. They are: M. S. Blumberg, president; J. P. Hall, treasurer; M. J. Levy, secretary. The executive committeemen are James R. Strong, chairman; L. K. Comstock, J. M. Watters, J. C. Hatzel, W. H. Taverner, M. S. Blumberg, M. J. Levy.

This association is the veteran of all electrical contractors' organizations, having been founded in August, 1892, and being now in its thirty-fourth year of active existence.

## Abbott on Southern Trip for Estimating Data

Arthur L. Abbott, technical director of the A. E. I., left on January 7 for a trip through the South, on which he will gather data for an important extension of the estimating work he has been carrying on for the association. He will travel by automobile in company with Arthur P. Peterson, field representative of the A. E. I., and during the trip will visit Philadelphia, Baltimore, Washington, Richmond, Norfolk, several cities in North and South Carolina, Atlanta, Savannah, New Orleans, Montgomery, Birmingham, Memphis, Nashville, Chattanooga and Knoxville.

The cost data to be obtained will tend particularly toward the development of a new manual of motor repair shop practice.

## N. Y. State Body Urges Separate Contract Letting

A DETERMINED campaign to induce the New York state legislature to legalize the separate letting of state contracts for electrical work is to be entered upon by the New York State Association of Electrical Contractors and Dealers. This was disclosed at the semi-annual meeting of the association, held January 13, in the board room of the New York City Electrical Board of Trade. At present electrical contracts on state work are sublet through a general contractor wherever possible. The progress of the work was reported on by the chairman of the committee in charge of it and the matter is expected to be brought before the legislature at this session.

Another important step taken at the meeting was the adoption of a resolution disapproving the general use of multiple assemblies of non-metallic sheathed cable. It was voted to send the past president of the association, F. A. Mott, to Chicago as its representative at the meeting which took place there on January 25 to consider the use of this wiring material.

Much satisfaction was expressed by those at the meeting over the appointment of Joseph C. Forsyth as supervising engineer of the New York Board of Fire Underwriters and the Suburban Fire Insurance Exchange. It was stated

also that the body would look favorably upon the consolidation of the underwriters of the entire state under one head so far as interpretation of rules was concerned.

L. R. Rogers was appointed chairman and James F. Burns vice chairman of the annual convention committee. It was voted to hold the next meeting at the Van Cuyler Hotel, Schenectady, on June 13, 14 and 15. A large delegation was assured from New York City and also from up-state points. One of the features of this meeting will be the inspection of the General Electric Works.

Representatives at the meeting of the executive committee were: F. A. Mott and H. F. Janick, Rochester; James F. Burns and L. R. Rogers, Schenectady; C. C. Miller, Oneonta; Hugo Tollner, Brooklyn, and A. Lincoln Bush, New York City. The joint conference committee was represented by F. A. Mott, J. P. Ryan and L. R. Rogers.

## OBITUARY

### Benjamin H. Ryder

Benjamin Hudson Ryder, electrical engineer of the American Steel and Wire Company for the past twenty-four years, died suddenly December 26.

## Unification of Wire Gages

The present confusion of gages for copper wire is to be done away with, according to the plan of the American Engineering Standards Committee, which will soon begin a program of simplification in that field. At present copper wire is classified by three gages, the American Wire Gage (formerly Browne & Sharpe's gage), the Birmingham Wire Gage and the Standard Wire Gage. Number 6 copper wire, according to the first gage, is .162 inches in diameter, according to the second gage .203 in. in diameter and according to the third gage is .192 in. in diameter.

This wide diversity necessarily leads to confusion in ordering or filling orders and some organizations in order to avoid error have done away with gage numbers and designate wire sizes in decimal fractions of an inch, which is in itself cumbersome. A conference of industrial groups interested in this problem will be called soon.

## N. Y. Independents Install Officers

At a large and enthusiastically social dinner meeting of the Independent-Associated Electrical Contractor-Dealers of New York, held at the Hotel Astor on January 13, the new officers of the organization were inducted into office. The officers, elected during December, are: S. J. O'Brien, president; H. M. Walter, first vice president; Fred B. Zenker, second vice president; A. Lincoln Bush, treasurer; Zoltan Hartman, financial secretary; Albert A. A. Tuna, recording secretary; M. J. Heller, sergeant-at-arms.

The dinner, which was the twenty-second annual meeting of the association, was attended by 350 leaders in the various branches of the industry. A. Lincoln Bush, president of the state association of contractor-dealers, acted as toastmaster and installer and in that capacity presented for the members a silver cup to the retiring president, L. C. MacNutt.

## North Carolina Decides on Two Meetings Yearly

Instead of holding four meetings a year, as it has done until this time, the North Carolina Association of Electragists will hereafter hold only two. This change in procedure was decided upon at the annual meeting of the association held January 11 at the O. Henry Hotel in Greensboro.

This first 1926 meeting was a highly successful one from the standpoint of attendance, over fifty delegates, representing the various sections of the state, being present. The annual election of officers brought these results: President, H. R. Boulting, Charlotte; vice president, J. H. Bartlett, High Point; secretary, W. P. Christian, Greensboro; treasurer, F. C. Davis, Greensboro.

Charlotte was chosen for the next convention of the association, the meeting to be in August and the exact date to be fixed later by the officers.

N. C. Kennedy, state electrical inspector, made an address on standards at the business session. He told of the new electrical code for 1926 and the building code for the current year. He also took up the matter of taxation on contractors and dealers according to the

number of men who are employed.

A talk, dealing with the business practices of contractors and dealers in Asheville, was made by George W. Webb.

N. L. Walker, retiring president, spoke of the work of the electrical men's organization in the last four years, how it had grown and how it had promoted a friendly feeling among the men of the industry. He considered this growth of fellowship one of the finest things about the association.

## New Code for New York City

A new electrical code became effective in New York City on December 22, 1925, the ordinance containing the code provisions having been passed by the Board of Aldermen on December 15 and approved by the mayor a week later. The new local code follows the provisions of the 1923 National Electrical Code, except in minor details. The most important provisions of the ordinance have to do with enforcement of penalties for infraction of the code.

Formerly infractions of the code were adjudicable only in civil courts and judgments were subject to collection only. Now the department may take cases directly into a police magistrate's court and a penalty of fine or imprisonment or both may be given by the magistrate. The maximum penalty is a fine of \$50 and imprisonment for 10 days.

The fee for a master electrician's license, new, has been raised to \$25 from \$10 and for the renewal has been raised to \$10 from \$5. The special electrician's license (for maintenance electricians) has been raised from \$1 to \$5 for both a new license and renewals. Hereafter there will be a \$5 examination fee, this amount to be applied to the license fee if the applicant qualifies for license. This was made necessary, it was explained, by the large number of men taking the examination with no chance of passing and who only wasted the time of the examiners.

According to the ordinance the license board will now be appointed annually instead of holding office indefinitely. The composition of the board remains the same.

The code still retains the rule of allowing no more than 10 amp. on a branch circuit in contrast with the ruling of the 1925 National Electrical

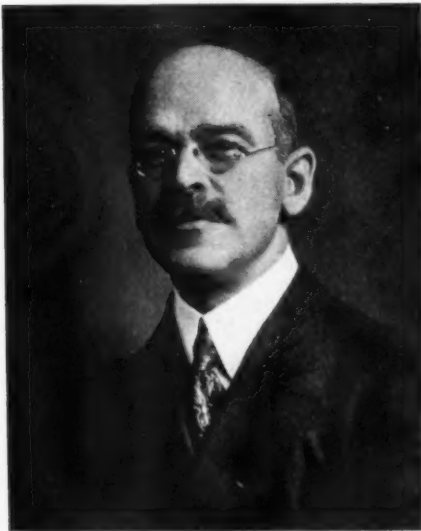


Just Before the Speeches Began at The Independent Associated Dinner

Code that 15 amp. may be allowed on a branch circuit. The drafting of the local code was mainly the work of the late Hubert S. Wynkoop, who also helped draft the 1923 National Electrical Code which it follows.

### Electragist on Board of Toronto League

At the annual meeting in December of the Toronto Service League a board of directors for 1926 was elected, the



R. A. L. Gray

new board including R. A. L. Gray, who has been serving for several years as an executive committeeman of the A. E. I. G. W. Patterson was another director elected to represent the contractor-dealer group in the league.

The 1926 program, involving a budget of \$18,000, was approved by the board at a directors' meeting. The full details of the biggest promotion campaign the league has attempted, one full of special activities, are to be disclosed soon.

One of the changes called for by the program is the addition of another field representative and another stenographer at the headquarters office. New offices have been engaged in the Excelsior Life Building and the staff of the league for this year will number five persons.

### Standardizing Drafting Room Practice

Drafting room practice will be the next commercial practice to enjoy the benefits of standardization, a comprehensive program for this having just been launched by the American Engi-

neering Standards Committee. This action follows the unanimous recommendations of a representative conference held in December, which was attended by fifty individuals, representing a total of forty-eight professional and trade bodies, schools and commercial concerns. The Association of Electragists, International, was represented by Arthur L. Abbott, technical director.

The program adopted by the conference consists mainly of the following items: Series of sizes for drawings; standard nomenclature for drawings; arrangement of views and sections; indication of dimensions and tolerances; indication of surface or finish; indication of threaded gears, etc.

### Another California Local Association

The electrical contractors and dealers of Stockton, Cal., have recently formed a local organization, the initial membership consisting of eight firms. The following officers have been elected: George Taylor, Hild Electric Company, president; G. Grider, Grider Electric Company, vice president; W. J. Collins, secretary; E. H. Grogan, Stockton Plumbing Supply Company, treasurer; trustees, Charles Bass, Commercial Electric Company; W. H. Murphy, Bright Spot Electric Company; E. Suplick, Eddy Electric Company.

### Urge Caution in Temporary Wiring

Temporary wiring for light and power in buildings in the course of construction has been a source of hazard to such an extent that it has been brought to the attention of the Electrical Committee for the purpose of making rules covering it. It is felt that some contractors do not give sufficient attention to the safeguarding of such work and too frequently the wiring is left in an unsafe condition, particularly as applied to the life hazard. The Los Angeles city electrical department is one of the first to consider this matter seriously and recently has submitted the following suggestions to the contractor-dealers' association of that city:

"Contractors should caution their foremen of the importance of more carefully guarding such work. When possible one man should be assigned to be responsible for this work.

"Particular attention should be given

to providing externally operated switches, both operating and circuit (especially on 3-phase power); polarizing of sockets; taping of conductors when joints are made and of bared places; maintaining all necessary grounds on both equipment and lighting circuits; proper protection of conductors and the removal of wires not in use."

### Randall Heads Rocky Mountain League

At the annual election of the Rocky Mountain Electrical Cooperative League of Salt Lake City, held December 28, 1925, the following officers and trustees were elected to serve during the coming year:

President, George R. Randall; vice president, B. E. Rowley; secretary and treasurer, R. M. Bleak; trustees, H. R. Bygel, J. A. Kahn, J. M. Perlewitz, W. J. Berryman, George R. Randall, F. C. Wolters, J. V. Buckle, G. J. Guiver, B. C. J. Wheatlake, W. A. Moser, B. E. Rowley, Thad J. Stevens, D. C. Green, P. M. Parry, H. M. Ferguson, R. M. Bleak, Orson John Hyde.

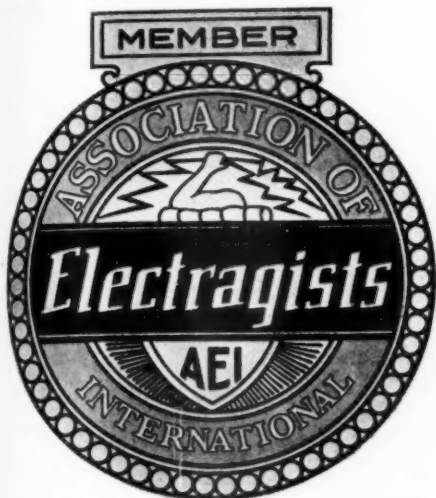


George R. Randall

Mr. Randall, the newly elected president, is president and general manager of the Salt Lake Electric Supply Company and is the first president of the league to be selected from the contractors' group. He has been in the electrical business for the past twenty-three years and has recently made a careful study of electrical ordinances. During his term of office, he has stated, he will endeavor to make the local electrical ordinances and inspection as nearly perfect as possible.

## Decalcomania Seal Now Ready for Electragists

The name "Electragist" is an increasingly valuable asset to members of the A. E. I. each year and should be used



The New Decalcomania Seal in Gold, Red and Blue

throughout each member's business. The association now is presenting a new means of keeping the name before the public in the shape of a decalcomania seal in colors, suitable for transferring to glass surfaces such as show windows, auto and truck windshields, etc. It is impossible to show in the accompanying illustration the very attractive color scheme of the seal, which is red, gold and dark blue. It is 5 inches high and 4½ inches wide. One seal has been sent to each member and additional copies may be had at 25 cents each, 5 for \$1.00.

## Southern California Executive Committee Meeting

Reports on conditions in the various districts of the southern division of the California Electragists were heard at the December meeting of the executive committee, held in Los Angeles. One of the most important reports came from P. H. Needham of the Beverly Hills district, explaining that the new ordinance which became effective January 1, 1926, is patterned after the ordinance now effective in the city of Los Angeles and will require each contractor to deposit a \$100 registration fee and give a surety bond to the amount of \$1,000. The members of the Beverly Hills district, according to the report, have also ironed out their differences with the Southern California Telephone Company on the matter of

telephone conduit service. The company will now accept a 1-in. conduit service instead of the 1½-in. service conduit specified by it recently.

## New Electragists

The following list of contractor-dealers have made application for membership and been accepted into the A. E. I. since the publication of the last list in the January issue:

### CALIFORNIA

#### Long Beach:

Acme Electric Co., Inc.  
Baty Electric Co.  
Kuster-Wetzel Electric Co.  
The J. W. Lane Electric Co.  
Mott Electric Co.  
O. W. Newcomb Electric Co.

#### San Francisco:

Goodwin-Wright Co.

### FLORIDA

#### Miami:

Florida Power & Lt. Co. (Assoc.)

#### Sebring:

Mitchell Electric Co.

### ILLINOIS

#### Chicago:

Fidelity Electric Shop.

### MICHIGAN

#### Jackson:

Jackson Electrical Appli. Co.

### MINNESOTA

#### Fergus Falls:

Norton Electric Co.

### NEW JERSEY

#### Atlantic City:

Eastern Hdwe. & Sup Co. (Assoc.)  
Franklin Elec. Co. (Assoc.)  
David Park Co.  
L. L. Jones Co.  
J. Howard Blackman.  
Frederick R. Rogers.  
Longport Electrical Co.  
A. L. Brown.  
Gruen Electrical Co.  
Economy Electric.  
George W. Post.  
J. S. Maegin.  
Electrical Equipment Co.

#### Camden:

Geo. H. Paxson.

#### Passaic:

National Electric Co.

### NEW YORK

#### Falconer:

Fox Electric Shop.

#### Jamestown:

F. & F. Elec. Service Co., Inc.

#### Lyons:

Carroll Electric Co.

### OHIO

#### Canton:

L. T. Haldeman.

#### Mansfield:

The Richland Elec. Co.

#### Warren:

The Luse Elec. Co.  
Hutton & Jones Elec. Co.

### PENNSYLVANIA

#### Birdsboro:

James F. Potts.

#### Carbondale:

Pioneer Electric Co.

#### Erie:

Garvin Electric Co.  
Earl's Elec. Shop.  
Ben Yaple Elec. Co.

#### Harrisburg:

W. H. Brownell, Jr.

#### Lancaster:

Wm. V. Brinkman.

#### Lemoyne:

John E. May.

#### Manchester:

Manchester Elec. & Sup. Co.

#### New Kensington:

Tri-City Electric.

#### Norristown:

Woodland Electric Co.

#### Philadelphia:

Chas. J. Mulhern & Co.  
Mueller Elec. Co., Inc.

#### Reading:

South End Elec. Co.

### WEST VIRGINIA

#### Chelyan:

McGraw Electric Co.

### JAPAN

#### Tokyo:

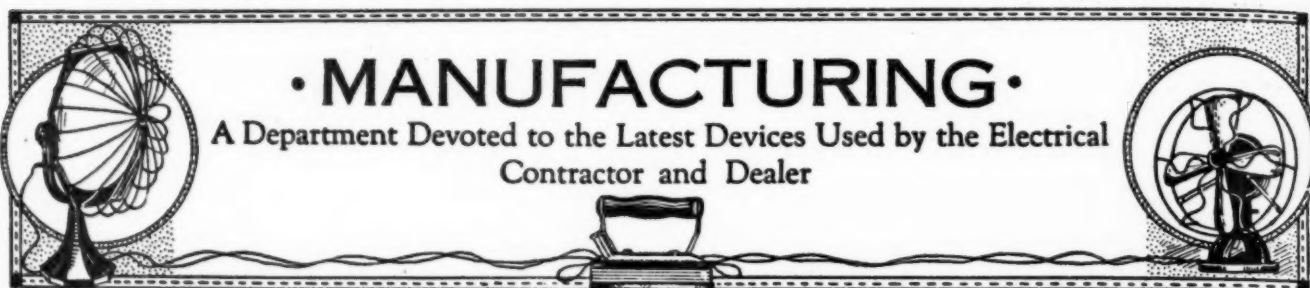
Howell H. Reeves, International General Elec. Co., Inc. (Assoc.)

## News Notes Concerning Contractor-Dealers

The phenomenal growth in the business of the Beltzhoover Electric Company, Cincinnati, Ohio, has required a large increase in the working capital of the company and at the last meeting of the board of directors it was decided to form a separate organization to hold and operate the company's real estate interests. Application has been made for articles of incorporation with an authorized capital of 5,000 shares no par value common stock. The new company will be called the Belver Realty Company. Officers and directors are Charles M. Beltzhoover, president; John D. Beltzhoover, vice president; Anna C. Kotz, treasurer, and Irene M. Beltzhoover and Myrtle M. Beltzhoover, directors.

The Young Electric Works, Augusta, Ga., is now occupying new and commodious quarters at 1007 Broad street, having been forced to enlarge its facilities by increasing business.

A new electrical shop has been established in Snyder, Okla., by Arthur Harris.



### Entrance Switch

The Wadsworth Electric Manufacturing Company, Covington, Ky., is marketing a new plug fuse type entrance switch made in four combinations. It is 30-amp., 125-v., and 2 pole. There are  $\frac{1}{2}$  and  $\frac{3}{4}$ -in. knockouts in sides, top and bottom end plates and back of cabinet, providing ample room for running



wires. Extended type trims can be used by removing the top end plate and extended type trims for any standard make, single phase, 5-amp., meter will be furnished when specified at slight extra cost. The switches are given the catalogue listing No. 33.

### Primary Resistance Starters

The General Electric primary resistance starters for squirrel cage induction motors, bearing the designation CR-7056-D-1, have been superseded by two new types, the CR-7056-D-3 in sizes up to 25 horsepower, and the CR-7056-D-4 in sizes from 25 to 50 horsepower. The 7056-D-3 has arc barriers and the 7056-D-4 starters are equipped with magnetic blowouts and arc chutes, enabling them to handle the larger motor currents.

Both starters have an improved magnetic time interlock, an important change being that the operating spring

now works by compression instead of tension. The interlock can thus be adjusted more easily.

Starting resistors are also redesigned and enlarged to give more capacity, and conform to Classification No. 16 of the Electric Power Club, which provides 200% full load current or more on the first point for 15 seconds out of every four minutes.

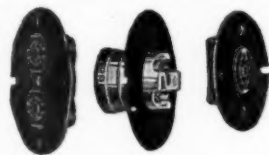
The enclosing case of the D-3 starters opens from the top, is ventilated, has two  $1\frac{1}{4}$ -in. knockouts in the top and has two knockouts of the same size in the bottom. The cover may be padlocked shut if desired.

The D-4 enclosing case is larger than that of the D-3, in order to make room for the increased size of the resistor. This case opens on the side and, like that of the D-3, can be padlocked shut if desired. It is provided with two 2-in. knockouts in both top and bottom.

Both forms of starter are arranged for wall mounting and have an approximate weight of 122 pounds.

### Arrow Devices

Six additions to their line of outlet box receptacles have been made recently by the Arrow Electric Company, Hartford, Conn. Catalogue Nos. 9,308 and 9,311 are outlets for exposed work and are available only in the keyless style, but can be furnished either with metal



covers or all porcelain. They are intended for installations where appearance is not so important, but they are practical for installation in cellars, garages, industrial jobs and exposed work, being grooved for weatherproof shadeholders. They are respectively with and without wire for  $3\frac{1}{4}$ -in. box.

Catalogue Nos. 8,272 and 8,273 are attachment plug receptacles for outlet

boxes, made up of standard side-wired single and duplex receptacles with metal covers for mounting directly to outlet boxes. They are respectively for a 4-in. and for a  $3\frac{1}{4}$ -in. box.

Catalogue Nos. 8,275 and 8,277 are



attachment plug receptacles for outlet boxes and provide service outlets for garages, kitchens and damp places where an all-porcelain device is essentially practical. Both new styles are for mounting on a  $3\frac{1}{4}$ -in. box.

A turn candle socket, adapted to deep candle cups, has also been developed by the Arrow company. It may be used wherever a keyless socket can be installed. The device is also furnished with a drip type tube, antique finish. The company lists the following among the advantages of the new device: "Light controlled by turning the candle; fits any candle cup; operating lever practically flush with outside of candle tube."

### Safety Fusenters

The Mutual Electric and Machine Company, Detroit, announces an addition to its line of "Fusenters" in its Type AF. These are combinations of standard units of moulded composition blocks, mounted on a steel plate which is adjustable in all directions so as to make it conform to the wall line; 3-inch wiring gutters are standard. The screw shell and wiring features are similar to those provided in the type BF "Fusenters," previously announced by this company. The fronts are die-made and of luminized finish so that when the fronts are mounted on the boxes the drawn panel encloses and fits securely with the molded composition blocks allowing only the fuses to be accessible. Safety features have been

# X-Ray Reflectors

TRADE MARK REG.

## For Every Window-Lighting Need!

Shallow windows, deep windows—high windows, low windows—each may be correctly illuminated with scientifically designed X-Ray Reflectors.

The "Jack" and "Jill" reflectors at \$4.50 each are two of the most popular units for medium size windows, while the "Queen" at \$6.00 is the running mate of the "King" for larger windows. Do not forget the No. 33 FLOOD-RAY for unusual effects!

*Every Good Electrical Dealer Sells These!*

**CURTIS LIGHTING, Inc.**

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CHICAGO

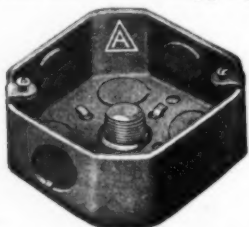
3113 W. Sixth Street  
Los Angeles



closely adhered to. Means are provided for testing and locating burnt out fuses. Any of the molded units are removable and replaceable without disturbing the cabinet proper. Card holders are provided for each circuit, but in addition the luminized drawn panel makes it possible to write, with pen or pencil, the names of the rooms controlled by the various circuits. Type AF "Fusenters" are made in all sizes and arrangements either for single fuse per circuit or two fuses per circuit.

### Appleton Fittings

The Appleton Electric Company, Chicago, has recently placed on the market a line of bar hangers made in several styles. Hangers only are furnished and can also be supplied complete with loom or conduit outlet boxes. The "SBH" straight bar hanger with stud is designed expressly for ceiling plates and for concrete work. The stud is drawn from steel and so made that it allows for free movement along the bar, and easy tightening by means of a wing locknut at any desired place. The box can be located at a desired spot, although the conduit may be a little off length. Notches provided at ends of bar prevent stud from slipping off.



To take care of certain requirements where a fixture stem permanently attached to box is desired the Appleton company has designed and is furnishing 3 1/4-in. and 4-in. octagonal also 4-in. square outlet boxes in this way. The fixture stem is solid, stamped from steel, and the four small prongs are inserted in the regular fixture stem holes in the bottom of the box and bent over, making the connection very rigid.

### Flush Plates

Reynolds Spring Company, Jackson, Mich., manufacturers of the "Reynolite Masterpiece" line of hot molded electrical fittings are now showing flush plates in all the usual styles up to four gang push and toggle switch plates. Made of "Reynolite," they are practically unbreakable and the finish is unaffected by heat, cold or acids.

### G. E. Distributors Merge

The Lake States General Electric Supply Company, Inc., has been organized to carry on business as a wholesale distributor of electrical supplies in Ohio, Indiana and Michigan. It has taken over the equipment and merchandise of the following companies and will retain their personnel: Erner & Hopkins Company, Columbus, Ohio; Indianapolis Electric Supply Company, Indianapolis, Ind.; Crescent City Electric Company, Evansville, Ind.; A. T. Knowlson, Detroit, Mich.; Post-Glover Electric Company, Cincinnati, Ohio, (except factory at Ludlow which will be conducted under the old name as heretofore); Republic Electric Company, Cleveland and Akron, Ohio; W. G. Nagel Electric Company, Toledo, Ohio (except manufacturing operations which will be conducted under the old name as heretofore). The above companies have all been wholesale distributors of General Electric merchandise. It was announced that the object in forming this new corporation is to provide a more effective form of organization and to give better service to customers. The General Electric Company will have a substantial interest in this new corporation.

### Manufacturing Notes

William K. Vanderpoel, since January 1, 1916, general superintendent of distribution, of what is now the electric department of Public Service Electric and Gas Company has resigned to become vice president and executive engineer of the Okonite Company and the Okonite Callender Co., Inc., manufacturers of wire and cable for electric purposes, with factories at Paterson and Passaic and general offices in New York City. Mr. Vanderpoel ranks high among the electric distribution engineers of the country, and his intimate knowledge of transmission and distribution matters and especially of high voltage practice was one of the reasons that led to his selection for his new position.

More than 60,000 items are listed in the new electrical supply book now being distributed by the Graybar Electric Company, successor to the supply department of the Western Electric Company. The company has also issued its 1926 fan manual, listing all the selling helps offered for the use of the dealer.

The Circle F Manufacturing Com-

pany has moved into its new office building at 720 Monmouth St., Trenton, N. J.

The following appointments have been announced by the Reynolds Spring Company, Jackson, Mich.: R. R. Macy to be district manager of the New York territory with offices at 420 Frelinghuysen avenue, Newark, N. J.; Edward F. Meyers to be manager of the central division, Chicago territory, with offices at 140 South Dearborn street; H. B. Parke to be manager of the Pittsburgh district with offices at 305 Seventh avenue; Charles N. Wiltbank and Charles Fryburg to be representatives in the Philadelphia district with offices at 353 North Fourth street; E. T. Gunther to be manager for the Dallas district with offices in the Santa Fe building; O. T. Jenkins to be manager of the Kansas City district. The company will also open offices in Atlanta, Los Angeles, San Francisco and Portland.

Three bulletins have been issued by the Allen-Bradley Company, Milwaukee, dealing respectively with their type F-2250 crane, hoist and mill controllers, their type C-1220 current-limit automatic direct current starter for machine tool service and their graphite disc rheostat for general industrial applications.

Roger Williams has become associated with Landers, Frary & Clark as manager of the heating appliance division in the New York territory. Mr. Williams until the first of the year had been New York manager for the Simplex Electric Heating Company.

The Groundulet Company is now located in new quarters at 480 Broad Street, Newark, N. J.

Control of J. H. Bunnell & Company, New York City, manufacturers of telegraph apparatus and fire alarm apparatus, has been acquired by J. J. Raftery and J. G. Dougherty. Mr. Raftery was formerly with the Western Electric Company and later was eastern general manager of the Manhattan Electrical Supply Company. Mr. Dougherty has been connected with the Illinois Steel Corporation.

The new general catalogue of the General Electric Company, No. 6001-B, is now being distributed. It contains 1100 pages and lists practically all the products manufactured by the company.